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MOBILITY: POTHOLE, RED LIGHTS, ONE-WAY STREETS

Developers cope with detours on the road to portable enterprise apps

BY EDWARD J. CORREIA

Mobilizing enterprise applications is rarely a seamless process. Despite vendor claims of simplicity—their marketing often plays down complexities and pitfalls—the process is often long and tedious for developers, IT staff and end users.

"The devil's in the details," said Rick Fleischman, director of product marketing for business-to-business solutions at Blue

Marlini Software Inc., a software consultancy that in July began demonstrating a mobile version of its CRM solution for mobile salespeople.

"Any development task is harder than it looks, particularly when you're dealing with people who are sometimes connected and sometimes not."

Blue Martini's main line of business is e-commerce solutions, and counts among its clients Kohl's, Levi Strauss & Co. and Saks



Changes are always needed to make apps work in small devices, says IBM's Colson.

► continued on page 19

UML: Too Big, Too Small, Just Right?

Experts weigh in on what's ahead for the Unified Modeling Language

BY JENNIFER DEJONG

UML 2.0 is too fat.

Modeling experts don't necessarily agree with the remark made by one of UML's own backers. But coupled with Microsoft Corp.'s recent plan to provide modeling tools, the provocative comment has sparked a discussion that's likely to benefit all parties involved: What is the best way to move the Unified Modeling Language forward, increasing its use among corporate development teams?

"The language has become

obese," said Cris Kobryn, co-chair of the Analysis & Design Platform Task Force for Object Management Group Inc., the non-profit industry consortium that oversees the UML specification. UML 2.0 includes 15 diagrams, but only six of them—Class,

Sequence, Use Case, Activity, State Machine and Composite Structure—do the heavy lifting, said Kobryn, CEO of PivotPoint Technology Corp., a UML consulting firm, in Fallbrook, Calif. "We should have cut the fat."

"I can't say I agree with that," countered Bran Selic, a

distinguished engineer at IBM Corp. and co-chair of OMG's Finalization Task Force for UML 2.0 Infrastructure. "The technology has evolved to meet a problem set. And the problems are becoming more and more complex." You can't solve

► continued on page 12

CODE BLOAT: SHOULD UML GO ON A DIET?



We should have cut the fat. UML has become too obese.

—Cris Kobryn,
PivotPoint



No, it hasn't. It's just that the problems are more complex.

—Bran Selic,
IBM



UML diagrams still aren't closely tied to the source code.

—Jack Greenfield,
Microsoft



Criticism is good, and developers will ultimately decide.

—Jan Popkin,
Popkin Software



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Application Simulator 3.1 Generates, Links Code

iRise claims Visio-like modeling environment works better with BEA Workshop

BY EDWARD J. CORREIA

A simpler interface and tighter integration with BEA's Workshop for WebLogic are the latest enhancements to Application Simulator 3.1, iRise Inc.'s graphical requirements simulation tool released in early August.

According to Emmet Keffe, iRise's co-founder and CEO, the primary benefit of Application Simulator, a US\$250,000 point-and-click modeling environment for business analysts to simulate applications before coding, is its appeal to nondevelopers.

"Business people don't like text-based requirements documents," he said, adding that the typical business analyst doesn't know HTML, can't work with DreamWeaver or FrontPage and certainly doesn't know data modeling. "This is geared toward somebody who knows



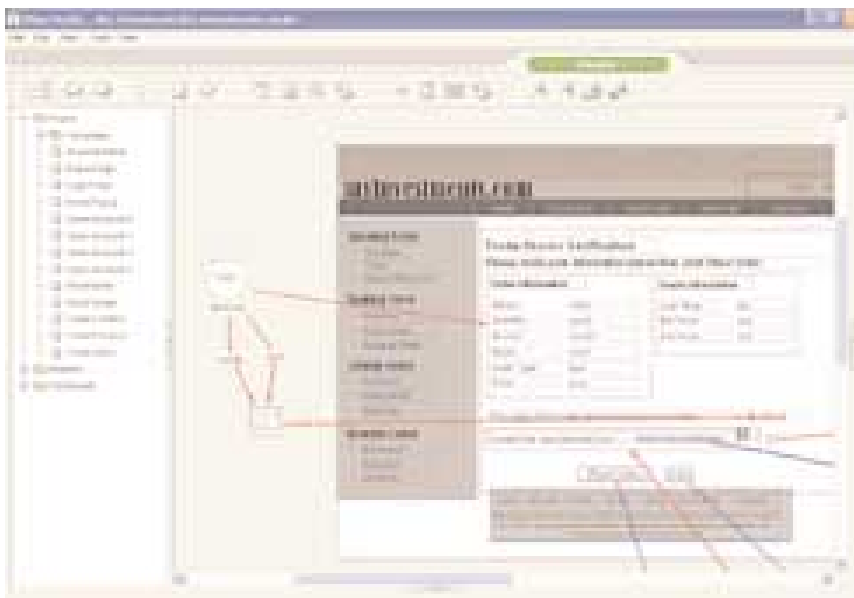
'Business people don't like text-based requirements documents,' says iRise's Keffe.

PowerPoint, Excel, Word and Visio. It's a simple, non-technical modeling environment in which a business analyst can create a functioning simulation."

New in version 3.1, Keffe said, is the ability to generate JavaServer Pages for BEA's WebLogic Workshop development environment, with page flow diagrams and automatic links from text requirements to their appropriate JSPs. "This makes it easy

for the developer to [use] the simulation; they can right-click on the text requirement and pop up the simulation to run through it before they start writing code," he said.

Keffe asserts that visual tools are superior to text-based methods of documenting requirements, which



The modeling environment creates simulations before any code is written, says the company.

many people have a hard time interpreting and communicating to developers. "What happens is that IT builds the system and as soon as it's running and people start doing transactions, they start telling you what they really wanted."

Such changes lead to late-

cycle application rewrites, which are expensive. "And some projects even fail based on that. This allows business analysts to give developers a visual simulation of exactly what the business users want that looks and functions like a real system. Then developers can go off

and write the code."

Also new is the ability to link code directly to individual pieces of the simulation. "Now you have traceability and you can do change-impact analysis, so if somebody changes their mind later, the developer can say which pieces of the simulation touch which pieces of code," and help accurately determine the time needed to perform the changes.

Keffe said iRise is positioning Application Simulator as a lightweight visual life-cycle solution that complements BEA's Workshop, and as an alternative to similar solutions from Borland and IBM Rational. "It's hard to get those products adopted because they're complex and typically too hard for the business analyst to use." Application Simulator is available now for Windows. ■

Busy Month for Burgeoning App Security Market

BY JENNIFER DEJONG

Activity was brisk in the application security market last month: Sanctum Inc. was acquired by a business management software company, and Kavado Inc. delivered new versions of its Web application scanner and firewall products.

On July 26, Watchfire Corp., in Waltham, Mass., announced it had acquired Santa Clara-based Sanctum for an undisclosed sum. With the sale, expected to close by the end of August, Watchfire acquired Sanctum's AppScan and AppShield products, as well as the company's intellectual property.

Watchfire said in a statement that it will continue to sell AppScan, which tests applications for security breaches and recommends fixes, and AppShield, a Web application firewall, as stand-alone products. But it also plans to integrate and extend the key capabilities of both in WebXM, its online business management software that helps track compliance with corporate security policies and regulatory agencies.

A June 2003 report from Boston-based research firm The Yankee Group estimates the market for Web application security products and services was worth US\$140 million in 2002, and predicts it will grow at a compound annual rate of 65 percent to \$1.74 billion by 2007.

KAVADO UPDATES OFFERINGS

Sanctum competitor Kavado, in New York, announced in July the availability of ScanDo 2.5 and InterDo 3.5. ScanDo, which finds and helps fix holes that hackers could exploit in Web applications, and InterDo, a Web application firewall, can run as stand-alone products, but they are designed to work together, said Kavado's vice president of marketing, Jon Greene.

"We are not just scanning the code. We are concerned with the entire infrastructure it is sitting on." ScanDo takes what it learns from a code scan and automatically generates security policies based on those findings, said Greene.

For instance, if the scan detects the presence of SQL code in a Web request, it creates a security policy that tells InterDo to block all SQL requests, except those it identi-

fied as legitimate. The presence of SQL code can indicate a possible "SQL injection" attack, a well-known vulnerability where a hacker maliciously alters a request to retrieve all records instead of just those he is entitled to see.

Previous versions of ScanDo, which starts at US\$11,000 per scanned server, and Inter-

Do, which costs \$15,000 per application firewall, identified only two types of privileged data: credit-card and Social Security numbers.

But the new versions let developers specify additional types, such as customer account numbers and patient data. They also provide a centralized repository, which consolidates results from both the scanner and firewall.

"When you have a dozen developers scanning and tuning their code, managers need to see an aggregated version of the

information," said Greene. It's important to have the big picture, he said.

New to InterDo is a feature that forces company insiders, not just outside traffic, to access the Web site through the firewall, said Greene. "Insiders know where the weaknesses are."

In addition to Sanctum, Kavado competes with start-up app security vendor Fortify Software Inc., in Menlo Park, Calif. Other application security players include Reasoning Inc., in Mountain View, Calif., and SPI Dynamics Inc., in Atlanta. ■

IBM SNAPS UP CYANEA

BY ALAN ZEICHICK

On the last business day of July, IBM Corp. announced its intent to acquire Cyanea Systems Corp., which sells tools for monitoring Web-based business applications. Cyanea, based in Oakland, Calif., is privately held; terms of the acquisition were not disclosed.

According to Robert LeBlanc, general manager of

IBM's Application & Integration Middleware Division, Cyanea will be integrated into the company's Tivoli business unit. This marks the 17th acquisition by the Tivoli group since 2001, with the largest recent move being the purchase of Candle Corp. earlier this year.

Cyanea's flagship product, called Cyanea One, manages the deployments of large-scale J2EE

applications, with an emphasis on those that interact with main-frame CICS transaction systems and IMS databases. There are currently two versions of the software: one for IBM's WebSphere, the other for BEA's WebLogic app server. It is unclear if the WebLogic version would be continued after the acquisition is complete.

Cyanea also sells WSAM, an application for managing WebSphere app servers running natively on z/OS and OS/390. ■

ColdFusion to Go Beyond Web Pages

BY EDWARD J. CORREIA

When released in early 2005, the next edition of Macromedia Inc.'s ColdFusion Web application server will include an extensible gateway architecture that

will enable developers to use events like instant messaging and SMS to trigger actions, the company told SD Times as the product entered a second phase of alpha testing in late July.

"As a ColdFusion developer, you can now build applications for a limitless number of potential Internet clients, not just Web browsers," said ColdFusion product manager Tim

Buntel. The list of predeveloped gateways to be included might also include FTP and Telnet.

"ColdFusion could watch a directory in a filesystem and do

something if a file is created or deleted there," he said, such as add a record to a database, send an e-mail or run some other code. Developers also will be able to build their own gateways. "For example, if you wanted to create a socket gateway, ColdFusion could listen on a TCP/IP port and take some action."

Code-named Blackstone, the successor to ColdFusion MX 6.1 also will permit the use of Flash to create, manage and present data-entry forms, something that is difficult today using Flash and ColdFusion as two separate products.

"You can do it, but it's quite a bit of work," Buntel said, adding that a simple set of tags can now be used to create multistep forms, accordion panes and tab controls. "And there are forms not available in HTML like calendars, tree controls and data grids."

The software also gives developers more control over field content validation, which can occur in the fields themselves, at the client, on the server or any combination of the three.

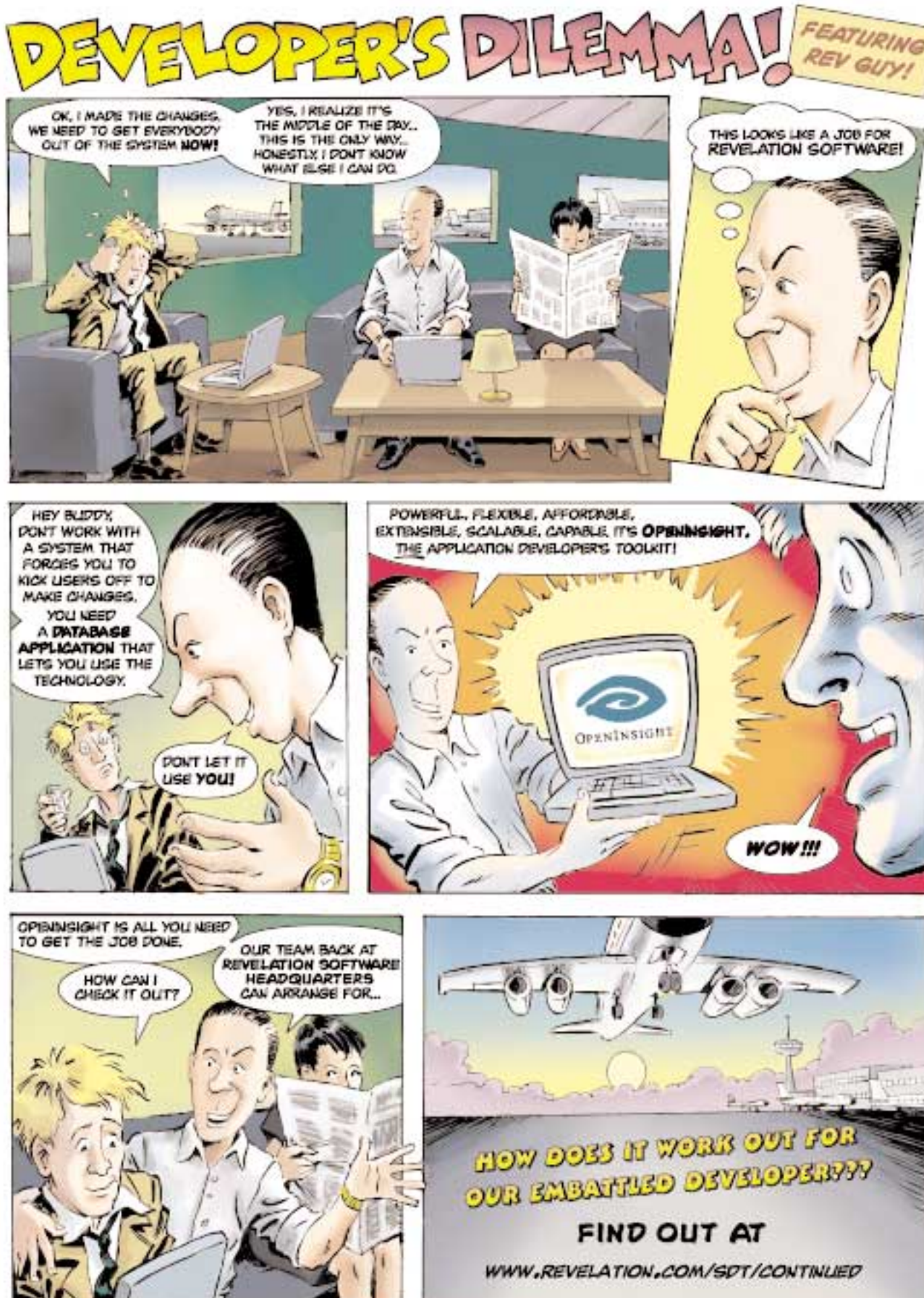
Blackstone also will simplify packaging existing content for viewing and printing, Buntel claimed. "You don't have to create two versions—an HTML version and a PDF version. You can just wrap tags around existing content and create printable PDF or FlashPaper documents with control over pagination, headers and footers."

BUILT-IN REPORTING

A new reporting engine that Buntel said is similar to that of BusinessObjects' Crystal Reports, is intended to help simplify the creation of data-driven applications. "You'll have a banded report interface with a query builder, calculated fields, repeating regions, subreports, charts and graphs."

Buntel claimed that Blackstone developers will have an easier time taking advantage of J2EE's ability to launch multiple instances to improve reliability. "With previous versions, if anything went wrong with an application, it would bring down all of the apps. With multiple instances, apps are completely isolated; you get the benefit of multiple physical servers without the added expense and management costs of multiple machines."

Blackstone is set to begin beta testing this fall. ■



Meet Jetson: A Java IDE For Junior Programmers

BY JENNIFER DEJONG

Professional services firm DataSource Inc. made its first foray into the tools market last month, announcing a prerelease version of a Java IDE called Jetson.

The Greenbelt, Md.-based company claims that Jetson is easier to use than competitive offerings from BEA, Borland and IBM. WebLogic Workshop, JBuilder and WebSphere Studio Application Developer are aimed at experienced Java developers, but Jetson is geared primarily to novices who are familiar with only basic programming concepts, said DataSource's chief technology officer, Joe Brinkman. "They might have a background in Visual Basic or COBOL. Or they may know Java, but not J2EE."

J2EE has grown into such a broad set of specifications that using it to develop good applications is becoming more and

more complex, said Brinkman. Jetson shields less-experienced developers from that complexity by automating repetitive tasks, such as creating Enterprise JavaBeans (EJBs) that go against the database. "There is a lot of setup and teardown associated with that," he said.

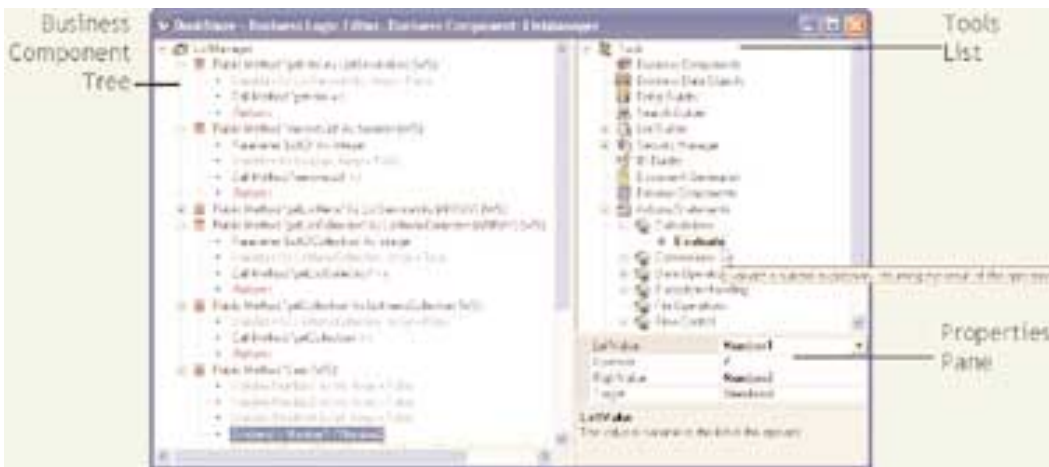
Because Jetson reduces the need to write code, DataSource believes that the IDE will also appeal to senior Java developers who want to avoid labor-intensive tasks, such as deploying a J2EE application. Doing that in competitors' offerings typically requires developers to write server-specific packages, said Brinkman.

But Jetson does that work behind the scenes, enabling one-click deployment. It also lets developers access the code directly if they want to, noted Brinkman. A prerelease version of Jetson, which supports JBoss 3.2.3, is available free of charge

at www.JetsonJ2ee.com. The completed product, available later this year, will also support WebLogic 8.1 and 6.1 and WebSphere 5.1. Pricing will start at US\$999 per developer, he said.

Competitors attempt to address the complexity of their IDEs with wizards. But to use them effectively, you have to understand J2EE, said Brinkman. For instance, in J2EE there are two types of EJBs: container managed persistence (CMP) and bean-managed persistence (BMP), he said.

"A wizard will say: 'CMP or BMP?' But if I'm not a J2EE expert, that's Greek to me." From Jetson's perspective, the developer doesn't need to know. The IDE will determine which EJB is appropriate. "It's a natural progression. Programming languages are getting easier. They are about getting people—as opposed to machines—to understand," he said. ■



Jetson provides easy access to system components and logic constructs, without the programmer having to know the ins and outs of J2EE.

SoapBox Sends an Instant Message

BY JENNIFER DEJONG

Helping .NET developers manage workplace instant messaging more effectively, Winfessor Inc. delivered SoapBox Server 2004 last month.

Based on the XML messaging and presence protocol (XMPP), the server is "presence-aware," said J.D. Conley, co-founder and principal software engineer at the Rockland, Calif., company. It can detect whether users are online, routing messages to those who are, and either holding or rerouting

via e-mail messages to those who aren't.

Unlike public instant messaging services such as AOL Instant Messenger, Yahoo Messenger and Microsoft's MSN Messenger, which are widely used in the workplace but not typically integrated with enterprise applications, SoapBox does not require users to sign on to the instant messaging application itself. Instead, it works with Microsoft Active Directory and NT LAN Manager, Novell eDirectory LDAP

and Sun ONE Directory Server, said Conley.

SoapBox, which starts at US\$495 per server, also provides reports on server usage and policy features for managing permissions, said Conley. The server is designed to work with the SoapBox Framework, Winfessor's development kit for building .NET applications based on XMPP. The SoapBox server competes with the JabberD open-source server, as well as commercial offerings from Antepo Inc. and Tipic Inc., both in New York. ■

News Briefs

NEW PRODUCTS

StructuredSoft Inc. has created **StructuredJ Open Source Foundry**, an open-source project for developing a procedural Java scripting engine for developers with HTML, JavaServer Pages and entry-level Java skills . . . Xtras.net, an online and catalog-based reseller of .NET tools and components, has launched **www.dotnetinfluencers.org**, a Wiki-style collaborative site for .NET programmers to document their professional activities . . . N Software Inc. is bringing out **IBiz Integrator**, a family of components for integrating applications with e-commerce systems. Due out this month will be components for QuickBooks, credit-card and electronic check payments, and VitalPC, an Internet payment processor. Later, the company plans integrators for PayPal, eBay and Amazon.com . . . Database vendor Mark Logic Corp., has created **XQ Zone**, a community Web site for XQuery developers, at xqzone.marklogic.com . . . Techtonik Ltd. has released **Activ-Aeon XA**, a tool for helping service providers and enterprises ensure that they're complying with the Microsoft Service Provider License Agreement. This program allows companies to rent software as long as they submit reports to Microsoft each month.

UPGRADES

TotalView 6.5, a debugger from Etnus LLC, adds a proprietary real-time memory analyzer that the company says does not instrument code or alter libraries, and can provide information about leaks and heap allocation without waiting for static postmortem reports . . . Rococo Software Ltd. has updated **Impronto Developer Kit**, a set of Linux tools for working with Bluetooth **rococo** wireless networks. Version 1.3 of the kit supports JSR 82, the Java APIs for Bluetooth Wireless Technologies . . . Microsoft Corp. has released **Office 2003 Service Pack 1**, plus the second beta of **SQL Server 2005**. For the new beta, Microsoft is highlighting its 64-bit support for the AMD Opteron processor . . . Excelsior LLC has created a Linux version of **Jet**, its Java Virtual Machine that performs native-platform compilations. Previously, Jet ran only on Windows. Also new in Jet 3.6 is compatibility with code obfuscation tools and smaller-sized executable files for Windows. Pricing begins at US\$140 . . . The Portland Group has updated its **PGI Workstation** compiler suite for 32-bit and 64-bit Linux. Version 5.2 supports all Fortran 95 extensions in PGF90, as well as the OpenMP parallel programming extensions in Fortran, C and C++. Portland Group claims a 10 percent performance improvement over version 5.1 . . . Version 4.2 of **Tamino**, an XML database from Software AG, adds XML-based message persistence for auditing and tracking, business document management, and a metadata repository in support of a service-oriented architecture. The company is now offering a developer edition of Tamino for US\$2,500 per seat; deployment costs \$10,000 per processor and up . . . AccuSoft Corp. has released a version of its **ImageGear** image processing toolkit for .NET. The US\$1,495 toolkit works with 23 file formats, including TIFF, JPEG2000 and PDF.

PEOPLE

David Quigley, executive director of the Component Vendor Consortium since 2002, has left the organization. The CVC is trying to decide whether to hire another professional director or turn to volunteer management . . . **Barry Glick** has joined ObjectFX as its new president and CEO. A founder of MapQuest.com, Glick recently served as CEO of Webraska Mobile Technologies. ObjectFX's interim president, **Nick Thomey**, will step down to COO; the previous president and CEO, **Tim Devine**, left at the end of 2003 . . . The SCO Group Inc. has promoted **Sandy Gupta** to VP of engineering for UnixWare. Gupta, who had been senior director of Unix Engineering, replaces **Wolfgang Bauer**, who retired . . . **Kent Beck**, author of popular books on Extreme Programming and Test Driven Development, will be joining the technical staff of test-tools



BECK

maker Agitar Software Inc. ■

Microsoft Updates Visual FoxPro

Database still has a strong following among developers

BY JENNIFER DEJONG

SQL Server and Access get all the attention, but the not-so-famous FoxPro database appears to be alive and well at Microsoft Corp.

Last month the company made available at msdn.microsoft.com/vfoxpro the beta version of Visual FoxPro 9.0. Among the many features new to 9.0 is the ability to create .NET-compatible solutions using XML Web services, said Visual FoxPro product manager Ken Levy.

The new version also offers enhanced SQL language capabilities and reporting features, as well as support for several new data types, including blob (binary large objects) and varbinary (which allows for faster indexes).

Also noteworthy in 9.0, said Levy, is the ability for developers to spice up Tablet PC applications by taking advantage of the device's ability to switch the screen orientation between

portrait and landscape modes.

Although the market for Visual FoxPro is not expanding rapidly, the database has a loyal following among roughly 100,000 users worldwide, most of whom have used it for more

than 10 years, Levy said, adding that because it includes a language, an IDE shell and a database engine all in one, FoxPro is attractive to developers who do data-centric programming. The language is

tightly bound with the database engine features, and unlike most databases, FoxPro supported object orientation as early as 1995, said Levy.

Originally named FoxBase, FoxPro was developed and

released in the mid-1980s as an alternative to the then-popular dBase II, from Ashton-Tate. Microsoft acquired the product when it bought Fox Software in 1992, Levy said.

Microsoft isn't pumping out many marketing messages about Visual FoxPro, but the product is alive and well, said Levy. "The return on marketing just isn't there the way it is for Visual Studio." ■

RSA Helps Java Web Services BSafe

BY EDWARD J. CORREIA

Security solutions developer RSA Security Inc. in mid-July released BSafe SWS-J, the latest entry in its series of securi-

ty components for Java developers that already includes certificate management, cryptographic and SSL editions.

"As developers focus more on Web services, we saw a need to secure those transactions," said Kathy Kriese RSA's senior product manager. To that end, BSafe SWS-J—the SWS signifying security for Web services—was built using the Java Cryptography Extensions architecture, Sun's framework and im-

plementations for encryption, key generation and agreement, and Message Authentication Codes, and can work with any JCE provider.

The tools, which Kriese said are delivered as a series of jar files and an API, are available now under annual, perpetual or royalty-based licensing models starting in the

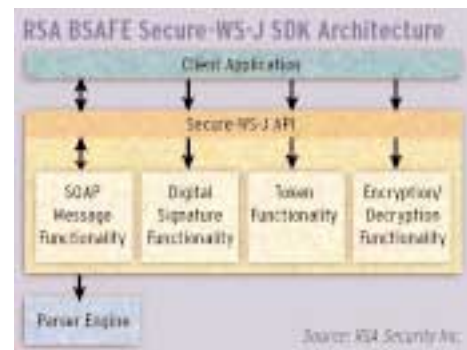
tens of thousands of U.S. dollars. "Some of the [other] Java security specifications aren't quite final yet," which Kriese



Users of the tools can expect interoperability, says RSA's Kriese.

said led to RSA's support of the OASIS Web Services Security 1.0 specification, enabling developers to expect interoperability with other Web services that also conform. "In theory, it shouldn't matter if one developer is using [BEA's] WebLogic and another is using [IBM's] WebSphere," she said. "If other

people are also following the OASIS 1.0 specification, the application should be able to work in both environments." ■



A series of jar files and an API work with existing development tools.

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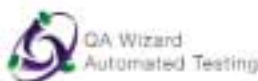
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Unify's NXJ Gets New Controls, Forms

BY YVONNE L. LEE

Unify Corp. is about to ship a version of its NXJ process automation tool that the company claims can build applications five to 10 times faster than by using an IDE.

NXJ 10.5, which is scheduled to be released Aug. 30, is a design environment and framework targeted at medium and large businesses for creating and maintaining business Web applications on J2EE. Developers build business processes by laying out the business logic on a design template. It consists of an interaction server, a design and development center, and ActiveWeb, Unify's proprietary system for controlling Web applications.

ActiveWeb sets up a communication channel between the browser and Web server whereby information in the browser can be updated without having to refresh the entire

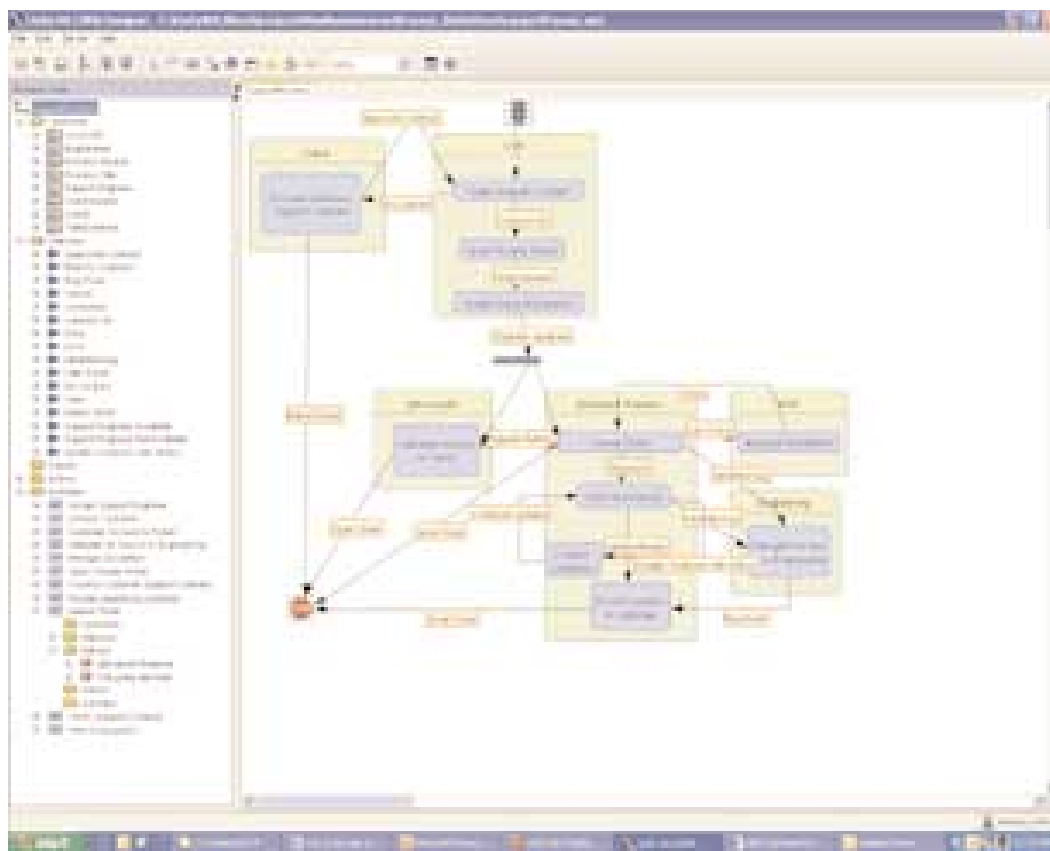
page. It also includes controls that connect to underlying data sources.

Development pricing for NXJ ranges from US\$3,000 to \$11,500 per seat. Deployment pricing begins at \$18,000 per processor.

NXJ 10.5 adds several new ActiveWeb controls: Advanced Data Grid, Date Picker, Cascading Menus, and Tree, as well as the ability to extend the ActiveWeb control set with Custom Controls. According to the company, this release can now build J2EE-based Web services as well as other J2EE applications. Organizations can deploy these applications either on NXJ Web Server or on another J2EE Web server.

These services can interact with .NET-based Web services, said Unify CTO Dave Glende. "You can consume .NET services, but you're not building them," he said.

NXJ also has improved



Developers build Web services projects by laying out business processes in Unify's NXJ's Designer.

forms, Glende said. An NXJ Form can now be mapped to a process definition without any additional programming. The forms also are more tightly integrated with NXJ Application

Designer. In this release, forms and form components can be reused. These reusable components can be subclassed or extended to provide a quicker and more standard development

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Judge Puts Brakes on SCO v. DaimlerChrysler

BY YVONNE L. LEE

DaimlerChrysler AG didn't blink, and in the end, The SCO Group Inc. is less likely to be able to sue its customers who also are using Linux, say intellectual property attorneys who are following the case.

In late July, Judge Rae Lee Chabot of Oakland County Circuit Court in Michigan dismissed all but one charge SCO had leveled against the automaker.

"AT&T and Daimler had come to an agreement back in 1988 with regard to Unix System V," explained John Ferrell, attorney at Carr & Ferrell LLC. "One of the things the contract said was that AT&T, or now SCO, is allowed to go back and get a listing of each of the computers that is using Unix System V."

However, in addition to trying to get information about systems running Unix, SCO tried to get information about whether Daimler had contributed to Linux and whether it had given away any trade secrets belonging to SCO, Ferrell said, and this went beyond its contracts with SCO.

Daimler argued that the contract required it to list the location, type and serial number of machines running Unix, and nothing more.

What's more, Daimler said it had not used Unix for more than seven years, and thus was not required under the contract to provide information about its computers and software.

Chabot examined the contract and determined that Daimler was correct, Ferrell said. Because she made the decision based on contract law, Chabot did not have to make legal determinations such as whether computer end users can be liable for copyright infringement, Ferrell said.

"What they tried to do is they tried to leverage a fairly straightforward audit in order to look into all sorts of other things," said Mark Radcliffe, intellectual property attorney at Gray Cary Ware & Freidenrich LLP. "The court said that isn't what the audit provision was for."

Nevertheless, the Daimler ruling is likely to prevent SCO from using software licenses to try to gain information about

organizations' computer systems for purposes such as attempting to charge Linux users for a Unix license for every copy of Linux they are running, said Radcliffe.

UNIX SYSTEM LABS REDUX

Separately, SCO, which had been called Caldera Inc. until after its lawsuit against IBM Corp., in June applied to register the trademark Unix System

Laboratories with the U.S. Patent and Trademark Office.

However, this move may not be successful because The Open Group owns the Unix trademark. Unix System Labo-

ratories was a division of AT&T that developed Unix. AT&T sold its Unix business to Novell in 1993. Novell sold the Unix trademark to The Open Group. ■



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UML Adoption Making Strong Progress

BY ALAN ZEICHICK

UML is popular. But the use of the Unified Modeling Language varies tremendously from organization to organization.

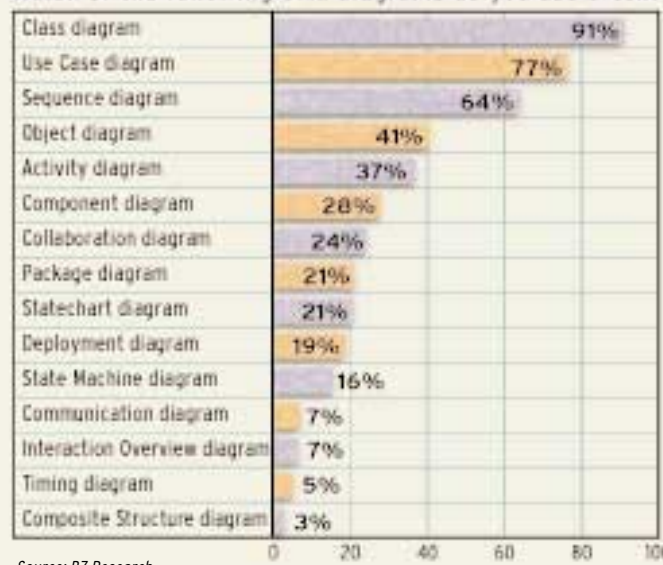
A study conducted in July by BZ Research shows that more than two-thirds of development managers say that UML is used to some extent within their organization. About 20 percent say that UML is used for all projects; 58 percent say that it is used for some projects. About 18 percent replied that UML is never used, while 3 percent responded that it was used in the past but is no longer used.

The study, which has an accuracy of within 3 percent, was completed by 347 individuals. BZ Research is a subsidiary of BZ Media LLC, publisher of SD Times.

Of those who said that UML was used for some or all of a project, nearly half—49 percent—said that UML is used only during project development, while 15 percent said that it is always used for the full life cycle of a project. Twenty-five percent said that it's sometimes used for development only, sometimes for an entire project.

When asked about future

Which of the following UML diagrams do you use often?



Source: BZ Research

intentions regarding the use of UML, the results were nearly evenly split, with 42 percent saying that they intend to model all future projects in UML, and 40 percent saying that they plan to model some, but not all, projects that way. Thirteen percent didn't plan to use UML in the future; 5 percent weren't sure.

Why use UML? The most common reason, selected from a group of 10 predefined choices, is because UML improves communication within a project

team, with 69 percent of respondents choosing that option. Other popular reasons were because UML allows software to better meet requirements (51 percent), because applications written with UML are easier to maintain (40 percent), because UML allows software to be built more quickly (39 percent), and because software written with UML has fewer defects (25 percent).

Why don't developers use UML, or use it more? The most

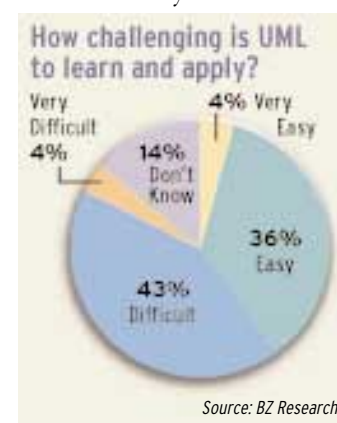
popular reasons were because the project team doesn't understand UML-based modeling (33 percent), because modeling slows down the development process (24 percent), because UML tools are too expensive (21 percent), because the project team simply doesn't need UML (20 percent), and because UML-based modeling adds to overall project costs (19 percent).

Of those who use UML, there was strong interest in the new UML 2.0 specification. Eleven percent indicated that they've already moved to UML 2.0, while 17 percent said that a move is currently in progress. Another 26 percent said that they plan to move to UML 2.0 but haven't started yet. Six percent said that they use UML 1.0 but don't plan to move to the new version, while the biggest group—39 percent—weren't sure what they would do.

When the study asked about Object Management Group's Model Driven Architecture initiative, results showed little adoption. Only 4 percent said that they've moved to MDA-based development, and 3 percent said that such a move is in progress. Another 9 percent plan

to move to MDA-based development some day. On the other side, 11 percent said that they're following the progress of MDA but aren't planning to adopt it, 45 percent aren't even paying attention to it, and 28 percent simply indicated "don't know."

UML has made significant progress over the past two years. In a similar UML study conducted in June 2002, 1 percent of respondents said that they model all applications in UML, while 32 percent said they model some applications using the language. At that time, 26 percent of respondents said that they would begin using UML within the next two years. That estimate seems to have been fairly accurate. ■



Source: BZ Research

UML: Too Big, Too Small, Just Right?

< continued from page 1

them by simplifying things, he said. Selic claimed that UML 2.0 *does* address the size issue. "We were very aware of this problem in assembling UML 2.0. We took it apart and put it back together so it is modular." The specification includes sublanguages, including event-driven modeling and activity modeling, which are mutually independent, allowing UML users to work with a single sublanguage if they choose to, he said.

But according to Kobryn, using UML 2.0 tools for real-world development projects often results in confusion. "If you look over the diagram types, you will get déjà vu attacks." For instance, the Component diagram and Composite Structure diagram are 90 percent similar, he said. "From a design standpoint, why include two diagrams that do the same thing? You should whack one of them."

Also, the sublanguages for Activity and Sequence are largely equivalent. Further complicating matters is a hybrid of the two, called Interaction Overview, he said. "The language is just too large, and a lot of people find that out by trial and error."

PEOPLE WILL TALK

Whether that's true is still to be determined, said Jan Popkin, founder and CEO of Popkin Software, in New York, and a member of OMG's Finalization Task Force for UML 2.0. If Kobryn's comment—UML 2.0 is too fat—holds water, users will let vendors know, he said. "There are a lot of diagrams in UML 2.0. You could make the argument there could have been fewer."

But who is wrong and who is right is not the issue. "What they are really asking is: What is the future of UML?" said Popkin. That people are critiquing UML is a good thing, which will help

advance the standard, added Popkin, who pointed out that Kobryn has a vested interest in bashing UML 2.0's bulk. "He was wearing a certain hat when he made that comment," said Popkin, and indeed, Kobryn's PivotPoint helps clients create modeling strategies around a subset of UML 2.0 diagrams.

Kobryn did not confirm whether his company plans to sell a product based on that subset, but he said: "PivotPoint is extremely interested in the rapid evolution of the modeling language."

Microsoft also is getting in on the conversation. The company announced plans in May to include modeling tools in Visual Studio 2005 Team System. It previously characterized its modeling strategy as "UML and more," noting that tools based solely on UML do not map precisely enough to the .NET Framework's Common Runtime Language.

Also at issue is that UML tools don't integrate closely enough with the life-cycle development process, said Microsoft's Jack Greenfield, an architect for Visual Studio Team System, who formerly worked for Rational Software Corp. prior to its purchase by IBM. Although many UML offerings generate code, and some support "round-trip engineering" (the ability to keep the code and underlying model synchronized), today modeling tools are used primarily for documentation, Greenfield said.

"UML diagrams are not closely enough associated with the way the software is built." The visual surface on which the architect works should function as a real tool, he added. "It should produce the things I have to deliver: the code, the configuration files and so forth."

At least two respondents to a survey conducted by BZ Re-

search last month echoed that view. "Drawing boxes doesn't finish projects," said one. "Straight UML simply doesn't translate into the best possible code for the solution," said another.

The survey asked readers of SD Times whether UML is used within their development organizations and if so, how it is used. Fifty-eight percent said they use UML for some projects. But of those, only 15 percent said they use UML for the full life cycle of the project. (See related story above.) BZ Research is a subsidiary of BZ Media LLC, publisher of SD Times.

While Microsoft's modeling plans deviate from UML, Popkin does not see the company's approach as a departure from the industry standard. Microsoft is one of several players helping to fine-tune the standard. "Microsoft is tuning UML, which makes it more valuable," he said. "They are helping to move UML forward. If they had trashed UML, that would have been a whole other story." ■

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BEA Ships Application Server for SOA

BY YVONNE L. LEE

BEA Systems Inc. began shipping in late July a higher-end version of its WebLogic server aimed at deploying service-oriented architectures.

The US\$27,000 per-processor WebLogic Server Process Edition adds business process management, data transformation and process monitoring to the standard WebLogic Server 8.1.

The data transformation features make it possible to map data from different sources. It translates how different applications describe data.

In addition to shipping the

WebLogic Server Process Edition, the San Jose company announced that it would release its particular Xquery implementation to an unspecified open-source group. Xquery is a

W3C specification for querying XML data.

"It's designed to be a standard language to manipulate, transform and extract reports from collections of XML documents," said Liam Quin, XML activity lead at the W3C. It's often thought of as SQL for XML, but it can query documents other than XML documents and relational databases, Quin said.

"If it isn't in XML, your query processor has to make it look as if it was with angle brackets," he said.

BEA's Xquery processor is one of more than two dozen implementations of the in-process specification. Dave Cotter, director of developer marketing, said BEA uses Xquery to map between unlike data sources. "We haven't made a decision as to where it will be," he said. ■

VSLive Focus: Microsoft Plans

BY ALAN ZEICHICK

Next month, the VSLive conference in Orlando, Fla., will focus on Microsoft Corp.'s future plans. Three keynote presentations, all delivered by Microsoft executives, will discuss the company's plans for the future of the Microsoft developer platform, connected systems and Web services, and service-oriented architectures.

The event, produced by Fawcette Technical Publications, has sessions on .NET, Visual Basic, ASP.NET and C# development in three separate tracks. There also are seven full-day preconference workshops and tutorials.

Monday is a special .NET Focus Day, presented by Microsoft. ■

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OMB: Free Software Isn't Cheap

Office of Management and Budget outlines open-source risks

BY JENNIFER DEJONG

Free software may be too costly for taxpayers.

That sums up a key position held by the U.S. government's Office of Management and Budget in a memo it sent last month to senior procurement executives who acquire software for the government agencies they work for.

The memo reminds decision-makers to "consider the total cost of ownership" for all software acquisitions. Although the memo says the reminder applies to both open-source and proprietary software, it targets what it sees as risks associated with open-source software. Open-source licensing "may affect the use, the security, and the total cost of ownership of the software and must be considered when an agency is planning a software acquisition," the memo says.

An OMB spokesperson did not respond to requests for additional information, including specifics about what (or who) precipitated the memo and whether government agencies had run into actual problems using open-source software.

But Tom Schatz, president of Citizens Against Government Waste, a nonprofit watchdog group in Washington, D.C., believes that by issuing the memo, the OMB, whose mission is to assist the president in preparing the federal budget, is taking a stand against open-source software.

"Earlier there was some consideration given to making open source a higher priority. We certainly welcome the clarification," he said. "People mistakenly refer to open source as 'free' software. Yet while the software itself is free, the cost to maintain and upgrade it can become very expensive."

TOO SELECTIVE?

Bill Weinberg, an open-source architecture specialist at the Open Source Development Labs, an organization that promotes the adoption of Linux, said: "In principle, we agree with the notion of considering total cost of ownership. But total cost of ownership studies are to some degree biased and use selective analysis techniques."

Weinberg argued the OMB's

memo is misleading because it does not clearly characterize the licensing issues associated with open-source software.

For instance, he said, the memo states: "Frequently, the licenses require users who distribute Open Source Software,

whether in its original form or as modified, to make the source code widely available." That appears to imply that users

must redistribute open-source software they extend.

"But they themselves are unlikely to redistribute software to anybody," he said. It's not that the OSDL is a proponent of open source at any cost, he added. But there are support costs associated with commercial software, too. ■

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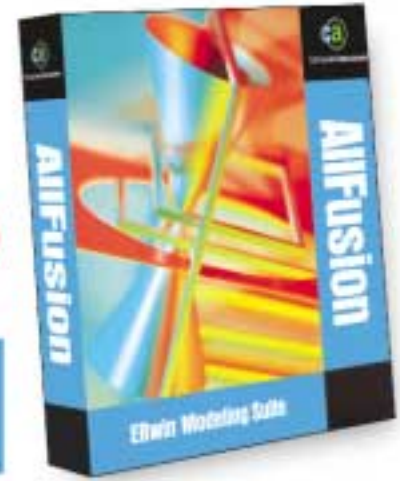
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He has been senior author of three books on software testing and quality: *Lessons Learned in Software Testing* (with James Bach and Bret Pettichord), *Testing Computer Software* (2nd edition, with Jack Falk and Hung Q. Nguyen), and *Bad Software: What to Do When Software Fails* (with David Pels).



REX BLACK

A 20-year software and systems engineering veteran, Rex Black is president and principal consultant of RBCS Inc., a leader in software, hardware and systems testing. He wrote *Managing the Testing Process*, now in its 2nd edition, which has sold more than 17,000 copies. His latest book, *Critical Testing Processes*, was published at the end of 2003 by Addison-Wesley. He has written numerous articles, presented papers and given keynote speeches at conferences and events around the world.



ROBERT C. MARTIN

Robert C. Martin has been a software professional since 1970. He is CEO and founder of Object Mentor Inc., a training, mentoring and consulting company specializing in process improvement and object-oriented software design. He is the author or co-author of six books, including *Extreme Programming in Practice* (Addison-Wesley), and *Agile Software Development: Principles, Patterns, and Practices* (Prentice Hall). Martin was the editor-in-chief of the C++ Report from 1996 to 1999, has published dozens of articles in various trade journals, and is a regular speaker at international conferences and trade shows. He also served as the first chairman of the Agile Alliance.



ELFRIEDE DUSTIN

Elfriede Dustin is author of the book *Effective Software Testing* and lead author of the books *Automated Software Testing* (Addison-Wesley), and *Quality Web Testing* (Addison-Wesley). Dustin has a BS in computer science and over 10 years of IT experience. She currently works as the manager, SQA Engineering for Managed Security Services (MSS), at Symantec Corp.



HUNG Q. NGUYEN

Hung Q. Nguyen is CEO and founder of LogiGear Corp., a software quality engineering firm offering training, testing services and test-automation products. Nguyen is author and co-author of several software testing books, including *Testing Applications on the Web* (2nd edition, Wiley), and the best-selling book *Testing Computer Software* (2nd edition, Wiley). He authors and teaches software testing curriculum for LogiGear University, and the UC Berkeley and UC Santa Cruz Extension. He holds a BS in quality assurance from Cogswell Polytechnical College, is a graduate of a Stanford Graduate School of Business Executive Program, and a Certified Quality Engineer (by the American Society for Quality).

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Mobility: Potholes, Red Lights and One-Way Streets

◀ continued from page 1

Fifth Avenue. But Fleischman said that for mobilizing the solution, which was built using IBM's WebSphere, major challenges involved "creating a seamless experience with what was designed as a Web application that assumed constant connectivity." Many mobile devices are often disconnected.

Blue Martini started with the Workplace Client platform, a new middleware- and client software-based model from IBM Corp. that replicates desktop functionality on devices running Linux, Pocket PC, Symbian and Unix. "Workplace Client provided the ability to deploy a Web-based application on a [mobile] client without changing the architecture, and allowing it to run when disconnected," said Fleischman.

Jim Colson, IBM's chief architect for client software, explained that while the plumbing is all there to allow Web-based apps to run unchanged, such apps are often built assuming full-time connections to services such as credit-card validation, and to inventory data and shipping schedules. "When you're in the field with a disconnected application, you have to submit a pending order with an estimate of price and shipping, pending confirmation on reconnection."

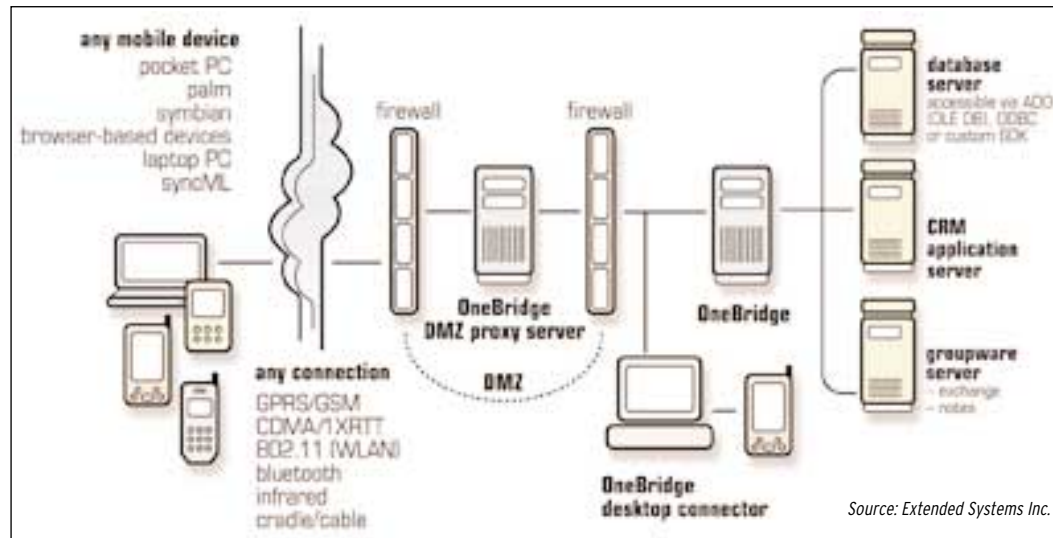
Colson said application changes, though necessary, are generally slight. "You have to introduce the intermediate state of an order pending completion," which he said for a fully connected Web app can be buried inside of a session bean while still appearing like an atomic operation.

"But when disconnected, you can reuse that code to support the disconnected capability." Minor changes to back-end systems include the addition of management, deployment and synchronization tools, he added.

TO SYNC OR NOT TO SYNC

Colson said among the first steps toward mobilization is selecting how the application will communicate with the back end—either by synchronization or messaging—a decision that depends on what's taking place in the field.

If the sequence of events is important, such as in transactional systems, then messaging



Extended Systems combines client- and server-side middleware to mobilize enterprise applications.

would be most appropriate, Colson said. "Once an order is received, the sequence is important for fulfilling that order to keep inventory accurate and adhere to the customer's credit limit."

Synchronization is most often used for catalogs and other reference applications indifferent to the sequence of updates. "In the case of a catalog, you would use synchronization to bring over the deltas that occur when price or inventory changes," Colson said.

HOW MUCH DATA WHERE?

The next step, according to Senthil Krishnapillai, senior product manager for the mobile platform group at Extended Systems Inc., is to decide how much data needs to be captured and sent to or from the device. Extended develops and markets solutions for mobilizing enterprise applications.

Krishnapillai said he generally divides mobile apps and their users into three basic categories: reference-oriented, for occasionally connected service and inventory workers for whom a data snapshot is adequate for a day or more; transactional, for time-sensitive applications that require constant connection and up-to-the-minute data; and the offline application running on a device that still has a full-time connection, such as a smart phone.

For the latter, Krishnapillai said Extended technology uses Short Message Service (SMS) to push data from the server to the device and vice versa—without incurring the cost of a wireless call. "As soon as info is updated, we send that information back to

the server, so there's no discrepancy between what is sold and what's available on the server." SMS is good for regional applications over known carriers, he said, but it's often too expensive for global applications. "It can cost 35 cents for one message across the Atlantic, for example."

Extended offers a server-side middleware framework, an SDK and libraries for Visual Studio, CodeWarrior and other environments that include pre-developed connectors for major databases, SAP and the Java Connection Architecture. "All the developer has to do is define the tables he will be using in which database," Krishnapillai explained.

A wizard displays the data-

base fields, and the developer selects which ones to expose on the device. "We then automatically push that configuration to the device, and the developer can build the application around that." The same method applies to other packaged applications, he said.

MAKING CONNECTIONS

The automation process was no such walk in the park for Stewart's Shops Inc., a chain of convenience stores based in Saratoga Springs, N.Y., that set out to replace the paper-based ordering system used in its 319 stores with an automated one.

"We wrote all the client-side software in C++ and Visual Basic," said Rick Cobello,

director of information solutions at Stewart's, describing a form-based application it developed for Compaq iPaq handheld computers running Pocket PC that store managers now use to place orders.

"They use drop-down menus for item selection," he said, rather than a system that involved scan cards. "Because of the way the paper-based system worked, our drivers picked up the sheets for the store's next order as they dropped off the current order. So they were guessing" at their inventory needs. He said the new system reduced order turnaround to 24 hours from three days.

According to Cobello, Stewart's developers also were challenged by a lack of communications; none of the stores had broadband connections, so a dial-up solution had to be developed. "Each of the iPaqs has to dial with its own internal modem; I think we're using the last of the iPaqs that can do that."

Along with improvements to ordering efficiency came reductions in training time. "The ordering process was very convoluted, so training was difficult," Cobello said. "The ordering process is now available to all staff, and training time has gone from days to minutes." He claimed the new application has saved the company about 100,000 hours of labor per year. ■

Intellisync on Verizon Wireless Network

Nation's largest carrier lets developers cut the PC cord

BY EDWARD J. CORREIA

A cell-phone app that relies on a desktop or laptop for synchronization stretches the definition of mobile. A recent deal between Verizon Wireless and Intellisync Corp. is said to enable users of palmOne's Treo 600 Palm OS-based smart phone to synchronize using Verizon's network, enabling enterprise developers to cut the cord from apps that formerly docked with a PC to send and receive changes.

According to Rip Gerber, Intellisync's chief marketing officer, that means the enterprise now has a broader selection of devices for application deployment. "I don't have to force users into one particular device for control and security," said

Gerber, comparing the Treo with major competitor BlackBerry, which requires its own server to provision the devices. "The Treo 600 is Palm's BlackBerry killer. Now the enterprise can [deploy] one server and one system management piece to control all devices."

Enterprise developers will have the ability to sync with individual clients or groups, and to push data to devices without initiation by the client. "It's also about data and file synchronization, attachments and enhanced PIM with data sync," said Gerber. Pricing for the suite, which also includes device management, is based on the number of enterprise data sources, back-end platforms and devices

to connect, and can run into tens or hundreds of thousands, Gerber said.

The tools, which are known by Intellisync customers as Mobile Suite, will be marketed by Verizon as Wireless Sync, and will work with BEA's WebLogic, Microsoft's Exchange, and IBM's Domino and WebSphere servers, as well as IMAP and POP-based e-mail servers and Samsung's i600 and i700, Kyocera's 7135 and RIM's BlackBerry devices.

According to Gerber, Intellisync tools have been behind the Palm synchronization engine since the first Palm Pilots, and also are used in IBM's WebSphere mobile development tools. ■

The Microsoft Road Map

Redmond seeks to bring order to back-office chaos by reinventing its 19 servers

BY LARRY O'BRIEN

Software development managers are often asked to make the crucial recommendation that decides between what the development teams eager to exploit the functionality of a new type of server want, and what the conservative IT teams that focus on the real burden of keeping the servers working 24x7 worry about.

That's been a real challenge for Microsoft shops, who find the difficulties associated with installing, integrating and customizing a new Redmond server, such as Exchange Server or SharePoint Portal Server, to be a huge effort—as much work, or perhaps more work, than bringing in a third-party server.

If Microsoft Corp. is going to live up to its promise of being a one-stop shop for enterprise developers and IT staff, its servers need to work together and play together better, especially when it comes to building in-house applications that take advantage of their capabilities.

At its Tech-Ed conference earlier this year, Microsoft laid out the solution, or at least hinted at it. The Common Engineering Roadmap is a vague series of promises on the behavior, deployment and documentation that are hoped to create a baseline of comfort in customers when pondering a commitment to new server technologies from Redmond.

There is a considerable due diligence burden on the team considering the use of a new server beyond the question of the worth of the core functionality—one has to consider the server product's upgrade path, its hardware and software requirements, its administrative inter-

face and flexibility and, not least, its learning curve. The Common Engineering Roadmap is a promise to reduce that burden, in part by providing consistent capabilities among Microsoft's 19 servers (see list below) and in part by documenting where a particular server lapses from the road map.

GOING WIDE, NOT DEEP

The Common Engineering Roadmap, primarily laid out in a white paper at www.microsoft.com/windowsserver/system/overview/engineeringroadmap.aspx, reads in large part like an internal directions memo.

It contains no concrete advice for customers beyond the obligatory boosterism of Microsoft server products as all-around wonderful things. The obligations imposed by the memo are universally inward-facing: Microsoft's teams will provide such-and-such at the time of launch, this-and-that within 90 days and so forth. It should be pointed out early, though, that the road map allows for "exemptions" from its strictures, at least initially.

The road map spreads out across a number of areas: security, deployment, management, availability and responsiveness to customer needs in the upgrade cycle. The security comments are particularly interesting because they give insight into Microsoft's integration of security into the software development process.

Public resources on Microsoft's Secure Windows Initiative, the SD³+C Framework, and the resulting Security

Development Life Cycle are scarce, even though security is a topic that should be addressed in all software projects.

Essentially, SD³+C is a "framework" not in the programming sense but in the conceptual sense: Security should be a concern of design, it should be the default behavior, and it should be encouraged in deployment and enhanced by communication. Indeed, the acronym itself means Secure by Design, Secure by Default, Secure in Deployment and Communications.

More concretely, with the road map, Microsoft is adding specific tasks and checks throughout the life cycle, as suggested in the diagram on page 21.

SECURITY TESTING INCLUDED

In addition to the life-cycle model, each server will support being scanned by the Microsoft Baseline Security Analyzer, which reviews the configuration, components and updates and uses heuristics to diagnose known vulnerabilities.

Of course, nothing that Microsoft can do will eradicate vulnerabilities either at the implementation level or from end-user misconfigurations. The Slammer/Sapphire worm demonstrated the speed with which a relatively small number of vulnerable hosts could be found, corrupted and used to devastating effect.

Slammer proved that even a locked-down firewall is useless if laptops can bring malicious code into the protected network. Microsoft shops will probably always have to exercise more diligence in protecting their systems from exploitation than shops choosing alternate technologies; tools such as the Baseline Security Analyzer can, at best, make that diligence more tolerable. Developers can download the analyzer at www.microsoft.com/technet/security/tools/mbsahome.aspx.

A common source of "misconfigured" systems arises when companies require multiple server technologies to interop-

erate. Too often, this has necessitated tweaking configurations in ways that introduce vulnerabilities. To some extent, this is mitigated by the rise of Unicode-based XML for integration—it's much easier to configure, monitor and modify a channel between systems when the channel carries only text-based documents and transports them with a standard protocol.

Still, if for no other reason than performance, many systems involve lower-level integration between different servers. As part of the road map, Microsoft promises to test "core scenarios" involving multiple Microsoft servers to ensure that the systems work well together. It's hard to know what to make of this promise: There are theoretically

NOW SERVING: 19 VARIETIES

BizTalk Server
Commerce Server
Content Management Server
Exchange Server
Host Integration Server
Identity Integration Server
Internet Security and Acceleration Server (ISA)
Live Communication Server
Operations Manager Server (MOM)

Project Server
SharePoint Portal Server
Small Business Server
Speech Server
SQL Server
System Center Reporting Server
System Management Server (SMS)
Virtual Server
Windows Server
Windows Storage Server





RAM limits of 32-bit addressability, the transition to native 64-bit modes is critical. Obviously, SQL Server will lead the charge to 64-bit mode because databases can often take great advantage of 64-bit computing, but processor-intensive technologies such as Speech Server also have a strong incentive to move to the more efficient instruction sets of the 64-bit chips.

Leaner servers may be consolidated on one piece of hardware within Virtual Server sessions, providing some protection against crashes. Of course, this discussion ties back to the previous comments on the difficulty of integration testing.

All servers will support Windows Installer and Windows Update. Microsoft promises that this will result in finer-grained control of the exact software level installed, with support for roll-backs and smaller patches.

In addition, all servers must provide, at launch, a Microsoft Operations Manager management pack and must service that pack on the same schedule as the core product. This will create a consistent, fully remotable administrative interface across the server products. Also, these management packs have a product knowledgebase built into their remote monitoring stack, so to some extent failures can be diagnosed quickly (and, since the packs will be updated in lock-step with produce releases, should not result in false diagnoses).

ACKNOWLEDGING COMPLEXITY

A refreshing aspect of the road map is that it acknowledges that server technologies will always have a major degree of complexity to them and lays down quite specific rules for training and educational resources. All servers will have "core" planning documents at launch. These will include deployment and operational training resources as well as a training road map.

"Non-core" training (sadly, developer training is included in this category),

will be available within 90 days of launch. Redmond also will provide on TechNet prescriptive guidance for common scenarios.

Within the road map, a number of required prescriptive guides are specified: "Getting Started," "Planning and Architecture," "Security," "Deployment and Test," "Operations," "Migration and Upgrade" and "Interoperability and Coexistence." While prescriptive guidance from Microsoft has been available, it has been spread across a number of areas ("Systems Architecture," "Solution Accelerators" and "Patterns and Practices"). In the future, these different sources will be integrated under a new "Windows Server System Infrastructure Environment."

Another major administrative commitment is that all servers must support a command line for scripting and/or be Windows Management Instrumentation-enabled. WMI is already supported for some administrative tasks in Windows and is quite potent. One would expect the next generation of the Windows shell (code-named Monad) to unleash this power.

Monad, an acknowledgement by Microsoft that the pipes-and-filters model of Unix administration and scripting is both appealing and powerful, looks extremely promising. Although nominally tied to the Longhorn release, it appears that Monad will also run on legacy operating systems—that is, older versions of Windows—that can run the necessary .NET Common Language Runtime.

A server product is useless if it is not highly available, and the road map lays out some promises on that subject as well. Stateless servers (such as Speech Server) are required to support network load balancing. Things are more stringent for stateful servers. The Enterprise Edition of each server product will support high-availability technologies. In addition to load balancing, they must support failover clustering by way of Microsoft Cluster Server, online backup and restore, and must survive failures

► continued on page 22

19 factorial, or 121,645,100,408,832,000, possible configurations of the servers, assuming only one instance of each, and not counting the many different ways of configuring those servers and their hardware platform.

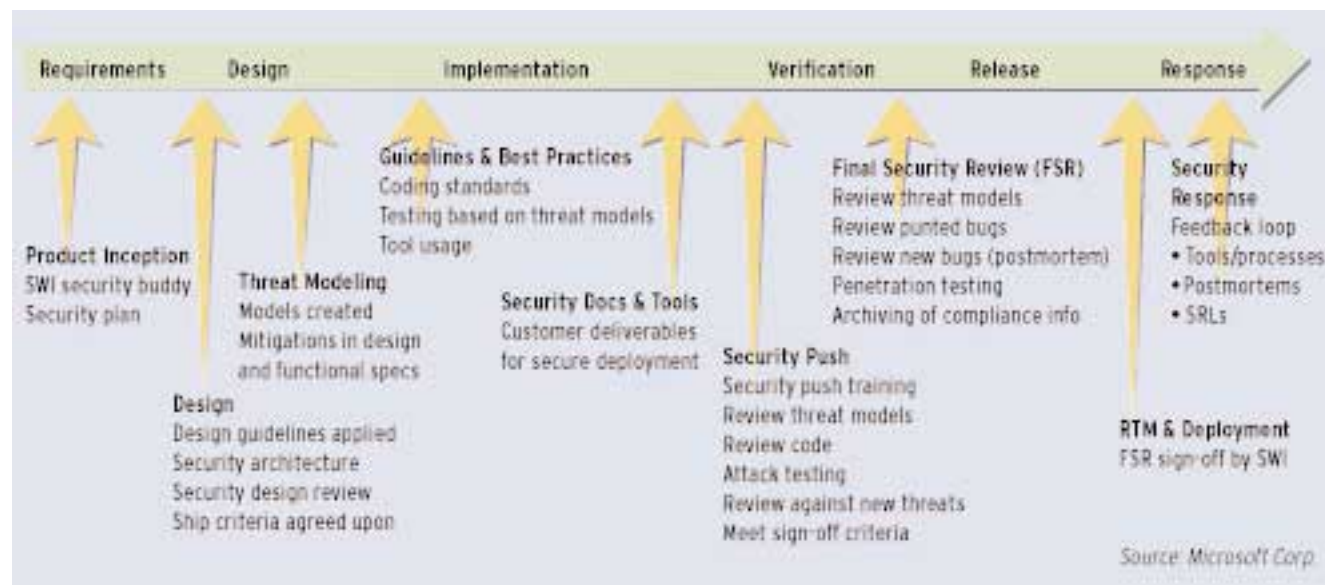
So how will the combinatorial explosion be winnowed? Which team will have to make adjustments to an incompatible product? Will a particularly trouble-prone server tend to be included or excluded from testing? Without full disclosure of which configurations have been tested, and where problems occur, developers may still find themselves pioneering some scenarios. Of course, in reality there are fewer than 121 quadrillion choices, but still the situation can be daunting.

DEPLOYMENT

For deployment, the road map states that all the servers must support running under Virtual Server and must be

runnable in 64-bit Windows. However, at least initially, servers will be allowed to run in the Windows-on-Windows 32-bit emulation mode of Win64. Compatibility with native 64-bit mode is part of the vision for the road map, but not a requirement.

Given that even commodity servers are already bumping their heads against



Microsoft's new software development road map includes security checks at several points throughout the process.

The Microsoft Road Map

◀ continued from page 21

without corrupting stored state or losing transactions.

BEING RESPONSIVE

The final theme of the road map is what Microsoft calls “respon-

siveness.” Like training, this is an area that seems more specific and fleshed out than some other areas. First, there’s Microsoft’s laudable commitment to a 10-year product-support life cycle. While this won’t necessarily

extend to service packs for very old products, the road map does lay out that service packs will be produced for both “N” and “N-1” versions. The obvious point of this is to prevent (at least for a while) security-forced upgrades.

Also, in response to the sensitivity that IT teams have to unnecessary or unexpected change, each server technology must have a product upgrade road map with a time line for issues that might cause compati-

bility breaks. Further, each server will “try” to provide a two-year warning for feature deprecation.

The road map lays out some specific imperatives on defect-correction and product releases. At a minimum, the top 10 issues driving product support calls must be addressed in a release as well as the issues causing the top 10 Watson dumps. Watson 2.0, a variant of the “Dr. Watson” client-side utility, is required by the Windows Server System. Error dialogs generated by Watson either can be queued for viewing or, for unattended servers, can be turned off entirely, with the dumps automatically forwarded to either a local reporting server or directly to Microsoft. In addition, each server will have an Internet-based feedback center for customers to communicate more directly with the relevant product team.


THE ROAD AHEAD

The road map lays out a more ambitious vision for its own evolution. This vision includes for all servers: native 64-bit support, role-based security, a best-practice analyzer akin to the security analyzer, CLR “support” (although whether this means hosting such as supported in the Yukon version of SQL Server is unclear), no reboots when upgrading or patching, a software “big red switch” for bringing the server offline rapidly, self-monitoring and configuring for performance, security commitments based on the analyzer results, IPv6 support, support for Longhorn’s “Crimson” remote logging and diagnostics, and enough specificity in error-logging so that Microsoft support can isolate the defect from a single incident.


But there are no real promises, and no time line.

The server technologies falling under the umbrella of the road map are now being evaluated against the program’s imperatives; their final evaluations will be published on the main Windows Server System site of www.microsoft.com/windowsserversystem with links back to the common criteria. The degree to which exemptions are invoked in these documents will essentially proclaim the long-term relevance of the road map: If this type of alignment can’t be achieved during the companywide run-up to Longhorn, it’s highly doubtful it will ever be achieved. ■

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Featuring


Software FX Breaks the Language Barrier

The Chart FX for Java Architect explains the intricacies of maintaining a single code base for all Chart FX products

The release of the .NET platform posed an exciting challenge to us here at Software FX, in order to maintain our position as industry leader, we could not simply distribute our product in a .NET wrapper; we had to totally rewrite it in C# to take advantage of the platform's new features and improvements.

This required us to explore and work with the .NET platform in intimate detail, revealing the closeness between .NET and J2EE. Both object models are very similar; in particular the graphics APIs, heavily used in Chart FX, are nearly identical in functionality. Additionally, the C# and Java languages are very similar.

The possibility of a Chart FX for Java was growing parallel to the reality of Chart FX for .NET. As long as we were redesigning our product, why not expose Chart FX to Java users?

Although similar, the platforms are not identical. There are some fundamental differences. Thus, the burden of delivering the most powerful charting component available and maintaining different sets of source code without diverting a huge amount of our resources into porting needed to be lifted. Dual development would make it very difficult to create new features and extensions as they would need to be written, tested and integrated for both .NET and Java.

An idea began to take shape, suppose we were to build an engine that would

FUNDAMENTAL DIFFERENCES BETWEEN CONTROL STRUCTURES OF JAVA & C#

- The concept of an assembly in .NET has no direct representation in Java.
- By reference parameters: out and ref in C# are not supported in Java.
- The concept of Value Types is not present in Java.
- .NET Boxing does not occur automatically in Java.
- Attributes for classes, properties, etc. are not supported in Java.
- Properties and Events are not supported by the Java language itself, however there are naming conventions that allow a component to expose them, namely the Java Bean Specs.
- Operator overriding is not supported in Java.
- There is no Licensing Standard for Java Components.

possibly even other platforms such as COM.

This would accelerate our time-to-market and ensure that our focus remain on building better products, giving us the freedom to improve as the burden of porting from one language/platform to the other would be virtually eliminated. So we did it.

Translator Architecture

The translation process follows the illustration scheme below.



First, original C# code is passed to a C# Parser and transformed it into a CodeDom, a structured representation of the code within the .NET framework. Next, the CodeDom is passed to a Java Code Writer and the desired Java code is produced.

This modular design, based on the innovative CodeDom, allows us to translate other .NET languages (e.g. VB.NET, Delphi, etc.) by creating a

The parsing process is fairly straight forward thanks to the intermediate CodeDom. Translating the CodeDom to Java is the next step. Control structures and basic statements are almost identical in these two languages.

Bridging the Gap

As we know, there are some fundamental differences between .NET languages and Java. These differences generate the need for ingenious

translation strategies. Here are some of the most interesting ones:

Value Types

As opposed to objects (Class Types), Value Types are allocated in the stack as they are declared- and are copied when they are assigned or passed as parameters.

Parameters by Reference

All parameters in Java are passed by value. This is not the case in .NET, the ref and out keywords in C# allows you to pass parameters by reference. Combine this with Value Types and it becomes very interesting.

When passing an object (Class Type) by reference an extra level of indirection is needed, for this purpose, the class ObjByRef is generated on the fly and encapsulates an object. The appropriate un-packing and re-packing

code is added to the beginning and end of the method and additional code is added after the call is made to return the values to the corresponding variables.

Boxing

Boxing is performed when a primitive type needs to be converted to an object. In .NET this occurs automatically.

Though the languages are similar, some situations require more sophisticated translation. Combining these situations increases the complexity exponentially. All of the solutions presented preserve the original design of the code and maintain the same level of performance; this is of the utmost importance.

The Finishing Touch

Having overcome each of these hurdles, we are able to translate our .NET code into very clean, efficient Java code.

Porting from the .NET Framework object model to J2EE is the next and most time consuming step. Limiting this stage to the libraries and classes that we use makes this daunting task more manageable. We concentrate on porting only our Server Side Components as we believe it is on the server where Java's strength resides.

This eliminates the need for porting all of the Windowing System (AWT/Swing) and leaves us with the drawing API, file IO, Reflection and standard classes such as Collections, Arrays, Hash Tables, etc.

Keeping in mind our requirement of generating code that looks and performs as code hand written in Java, converting from one object model to the other involves not merely wrapping the J2EE classes into a .NET Framework shell but also creating some sophisticated code conversions making direct use of fundamental Java classes without wrapping them. For example, we keep the string handling in native Java instead of going through wrappers. The same is done with many other key performance related classes.

The Final Product

We invested in the future and it paid off. Instead of taking the easy, short road and building Chart FX for Java from scratch once, we opted for a more ambitious approach: building an engine that ports our current version of Chart FX to Java and ensures that we stay focused on developing more functionality and that this functionality will, with very little effort, be ported to our Java versions.

Due to the success of this project, we are developing parsers and code writers to port .NET code to COM (C++) to bring new developments to more customers. We also continue to improve our existing translation engines to include support for new functionality for all platforms.



Chart FX for Java



“Suppose we were to build an engine that would allow us to write code only once.”

allow us to write code only once, in C#, it being the language we started with, yet deliver it for .NET, Java and

parser for them. It also allows code generation in other languages by plugging in a different CodeWriter (e.g. C++).

ABOUT THE AUTHOR



Francisco Padron is a senior Software Architect and co-founder of Software FX, Inc. in 1993 and the publisher of Chart FX.

SoftwareFX

EDITORIAL

On the Road: Again and Again

The concept of application mobility may be a solution—or a series of solutions—looking for a problem.

Consulting companies, platform vendors, tools providers, carriers—nearly everyone in the software development ecosystem has jumped onto the mobility bandwagon. Make applications run on a smart phone. Enable seamless WiFi-based rich-client computing. Bring the client/server model to Windows CE devices. Add lightweight databases, message-queuing middleware, runtime containers. Make it mobile.

It's an impressive vision, and at conferences like JavaOne and Tech-Ed, there are many equally impressive demonstrations. There are only two problems with mobility, as presented today by the vendor community. First, real-world applications aren't as easy to build, deploy and manage as their slick demonstrations would lead you to think. Second, while some enterprises may have a compelling need to write new mobilized applications or extend existing ones, the majority of enterprise apps need never go beyond the firewall—or the desktop.

For the past decade, more or less, enterprise developers, and ISVs writing business applications, could count on at least some homogeneity among client platforms. For the most part, for example, they were running a full-featured operating system, typically a flavor of Windows or the Macintosh, and thus offered a fairly consistent API. More recently, cross-platform apps could be written to run within a browser, or in a J2SE virtual machine.

Further, the developer or post-deployment administrator didn't have to worry about the connection between the client and the server. It was consistent and persistent, and could be safely ignored.

There were also no transaction costs, no intermediaries, between the client and a server. Even if there were a remote-access link, such as over a dial-up modem, Frame Relay connection or an Internet VPN, it, again, could be ignored.

Within the world of mobility, that's not true. There are many form factors of clients, each with its own operating system, hardware constraints and runtime environment. Connection quality can vary tremendously. There are many service providers in the loop, some of which want to collect tolls for message traffic, or for making available a downloaded application.

Developers, administrators and line-of-business customers who want mobilized applications have to prepare not only for the added complexity of writing applications that will support such a diverse client population, but also for new post-deployment expenses in operating them.

Another factor: The character of client hardware, software and connectivity is changing rapidly, meaning it's likely that mobilized applications being written today will have to be rewritten or upgraded, again and again, merely to keep up with client-side developments. That's not a happy scenario for those enterprises that already see a huge backlog within their application development department.

And what's the business case again?

So, while it's laudable that the industry is working to create new platforms for mobility, they need to do a better job of simplifying the entire development, deployment and management stack, while narrowing the choices facing enterprises. Otherwise, this technology's never going to get out of the lab. ■

21 Rules of Thumb for Delivering

Delivering great products on time is a difficult but not impossible task. Elements you think would count the most count for very little. Development methodology, process, technical prowess, excellence of tools and depth of project management skills all influence the outcome of a software development project; but nothing indicates success as much as the individual's ability to focus on a few critical and conceptually simple things. These things can be expressed as rules of thumb.

I enumerate 21 of these rules of thumb. Pick a handful (or so), apply them, and your project will probably be more likely to succeed. I lump them, naturally enough, into three groups: "Shipping," "Great Products" and "On Time." (Fancy that!) I cover them in reverse order, because the concepts build a bit.

By the way, a product, as used herein, means any object created as the output of purposeful effort. Whether a product is great (perhaps) can be determined only in retrospect, presumably by assessing the extent of favorable results it produced as measured against the costs its creation and use incurred. Since we can't know that in advance, I locally define a great product as one wherein the potential of its creators and its most obvious intended uses have been served.

ON TIME

1. Don't know what you don't know. It is essential not to profess to know, or seem to know, or accept that someone else knows, that which is unknown. Almost without exception, the things that end

up coming back to haunt you are things you pretended to understand but didn't early on.

FIRST OF A
THREE-PART
SERIES

At virtually every stage of even the most successful software projects, there are large numbers of very important things that are unknown. It is acceptable, even mandatory, to clearly articulate your ignorance, so that no one misunderstands the corporate state of unknowingness. If you do not disseminate this "lucid ignorance," disaster will surely befall you.

Human nature is such that we dislike not knowing things we deem important to our well-being. Since there is so much we don't know in a software project, the nearly universal tendency among developers and their managers is to gloss over or even deny altogether the extent of their ignorance.

You should reward and treasure those who consistently make themselves aware of the list of relevant things that are currently unknown. It requires mental and psychological strength to resist the normal human cravings for certainty and order. It is especially difficult to believe in uncertainty when things have a veneer of orderliness, which is often the case. Pseudo-order is a maladapted defense against uncertainty.

The organization surrounding you will undoubtedly abhor uncertainty, would infinitely prefer pseudo-order, and will make countless attempts to magically convert your ignorance to knowledge. Your job is to make uncertainty an unshakable fact, and to coerce the

reshaping of the surrounding organization to cope with the uncertain situation. The organization must learn to thrive in an uncertain environment for its own well-being.

You should expend a great deal of effort making sure that all the people on the



Jim McCarthy

By Invitation

project are aware of their ignorance rather than naively converting it to falsehoods. Bear down on them until they realize they haven't comprehensively assessed the unknowns. In the successful project, this is much easier in

the early stages, or during times of change. This is no time for niceties. People ultimately prefer success even if disillusionment is a prerequisite.

2. Get to a known state and stay there. The function of QA is to know (and articulate) the quality of the product at all times in the development cycle. This can be achieved by abbreviated, repeatable tests conducted daily, and full product sweeps conducted weekly or biweekly.

It is not properly the job of QA to determine when a product is ready to ship; rather, the moment of shipworthiness in a product development cycle is evident to everyone involved, and is noncontroversial. After all, delivery has been the goal of the entire effort. Crossing the finish line, while it has intangible emotional and definite financial rewards, is no surprise when you have observed every single painful step toward it.

The only reason you have been able to make these micro-observations, however, is because you got to a known state and stayed there. Generally, your QA is how you did it.

Achieving a relatively accurate view into product status is a very challenging goal, requiring a highly motivated and competent QA team. It is also a prerequisite for success. Many software development organizations even at this late date have rudimentary or no real QA assets. Frankly, there is little that can be done for them until they make the appropriate investments in creating a modern development organization.

Author's note: This essay was first drafted in 1994, really as notes I made while wrestling with the idea of turning a talk I gave into a book. I had been presenting "21 Rules (The Talk)", since 1989, originally under the name "Slipping Without Falling." Ultimately, from these notes a book did congeal in "Dynamics of Software Development," which came out in 1995.

Somehow subsumed in the process was this essay, which apparently, someone had preserved, and which recently somehow showed up on the Web, where it provoked a fair bit of comment. It was never really intended for publication, and I have never published it anywhere that I can recall. But, once posted, a number of people seemed to have found it useful (or at least provocative). So I brushed it up a bit, changed a few of the rules, and now offer this updated version for your inspection.

Great Products on Time

A known state consists of all components having accurate and accessible status information at a given point in time. You know that it's accurate because the status has been tested by QA.

A developer articulating the status of his/her component is an exercise that does produce information, but if it happens to communicate the component's status, it is usually an amazing coincidence. This is someone else's job.

Status should consist of a comprehensive listing of tested and missing functionality, bug count sorted by severity, bug arrival rate, bug fix rate, projected total bug count and other vital metrics.

3. Remember the triangle. There are fundamentally three things that you are working with as a member of a development team: resources (people, money and things that cost money), product features (including the quality of their implementation) and time (primarily as expressed in a schedule). Changing one has an impact on at least one other axis, usually two.

It is a simple enough matter to mentally run through the sides of the triangle, or force others to do so, when discussing any part of it. Since the people, the product or the schedule is usually what you are discussing, for completeness' sake, you must constantly envision the triangle. This discipline leads to the most fruitful line of thought.

4. Don't go dark. Some features have long development lead times—months or even years. Yet slips usually happen a little bit every day, and must be compensated for a little every day. This means that the granularity of individual tasks must be such that deliverables are made at intervals sufficiently small that slips will surface frequently enough to be compensated for.

Two weeks, for example, is typically too long a time to go without knowing what is happening on a project feature. Team interdependency is also a powerful motivational force. Each person on the team can make a promise every week, and keep or change that promise (if need-

A video of Jim McCarthy presenting the 21 rules to an audience, as well as the related book, "Dynamics of Software Development: Don't Flip the Bozo Bit and 53 Other Rules of Thumb for Shipping Great Software on Time," are available at www.mccarthy-tech.com.

ed) every week.

If the goal of the effort is to ship a great product on time (and what else could it be?), and if everybody accepts that goal as uppermost, the chase, though challenging, is generally enjoyable.

5. Use zero defect milestones. Organize the project around the concept a reaching milestones with zero defects. ZD does not mean that the product does not have bugs, or missing functionality. It means that the product achieves the quality level that had been set for that milestone. The product is tested to that effect.

The essential point of ZD milestones is that nobody makes the milestone until everybody does, and nobody leaves it until everybody does. This enables the team to discover what aspects of the project are in trouble. Load balancing can occur. Awareness of unknowns rises.

At a milestone, the team and its leadership also have the opportunity to perceive the whole project status simultaneously, to draw conclusions about erroneous practices, to remedy bad design decisions and to reorganize for peak performance. Delivering is just the final milestone. Though the external organization cares most about delivering, which adds special pressure to that milestone, the team develops extraordinary focus and introspection about each and every milestone. ■

To be continued in the Sept. 1 issue of SD Times.

Jim McCarthy led software development teams at Bell Labs, The Whitewater Group and Microsoft Corp. He is the author of "Dynamics of Software Development" and, with Michele McCarthy, "Software for Your Head."

Letters to the Editor

NO LAW OF THREES

I think Larry O'Brien needs to study Metcalfe's law ["Microsoft's Tablet Works Right Away," June 15, page 35 or at www.sdtimes.com/cols/winwatch_104.htm]. It's not a law governing the number of releases required to achieve a useful product; there is no law of threes here. The closest thing I have heard to this is stay away from uneven-number releases, 1.0 sucks, 2.0 fixes it, 3.0 adds new stuff (that suck), 4.0 fixes that.

Metcalfe's law simply states that a communication medium is increasingly useful as more people use it.

I don't see how this applies to the tablet, since it's so darn expensive and new, few people have one. I don't count the useless prototypes of the 1990s, as they really sucked. So the concept is not all that new, but hardware like this was not available at that time. Microsoft did a good job releasing a new OS for a new form factor, and did it

right on their 1.0 product.

The success here is that I am not the beta guinea pig Microsoft has made me in the past—for that they deserve credit. But saying that the article is an affront to all those who worked on the primitive beginnings is like complaining that the guys who made electric arc lights (or anyone else that researches what is now recognized as important but failed technologies) should get recognition for their contribution to the light bulb.

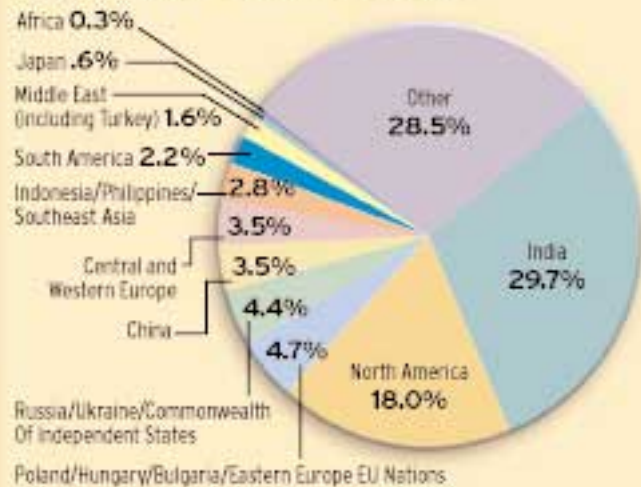
Michael Clark

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Where Are Those Developer Jobs Going?



The overwhelming number of software development projects being contracted outside the company are going to India, a new study published by Evans Data Corp. has revealed.

Enterprise Development Management Issues, Summer 2004, which covered nations around the world, showed that nearly 30 percent of the 316 responding companies said that India's highly educated work force and base of software companies have made the nation their top choice for application outsourcing.

Running second at 18 percent were North American countries, which showed that while development services may be cheaper elsewhere, foreign countries still rely on North America for services they may be unable to find elsewhere.

Countries in Eastern and Western Europe, Asia and the former Soviet block, despite being combined into groups, still showed usage for outsourcing projects in the single digits.

Source: Evans Data Corp., Enterprise Development Management Issues, Summer 2004
www.evansdata.com

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Publisher

Ted Bahr

+1-516-922-2101 x101 • ted@bzmedia.com

Editor-in-Chief

Alan Zeichnick

+1-650-359-4763 • alan@bzmedia.com

Editor

David Rubinstein

+1-516-922-2101 x105 • drubinstein@bzmedia.com

Senior Editors

Edward J. Correia

+1-516-922-2101 x100 • ecorreia@bzmedia.com

Jennifer deJong

jdejong@bzmedia.com

Associate Editor

Yvonne L. Lee

+1-408-255-1153 • yilee@bzmedia.com

Copy Chief

Patricia Sarica

psarica@bzmedia.com

Art Director

Mara Leonardi

mleonardi@bzmedia.com

Art/Production Specialist

LuAnn T. Palazzo

lpalazzo@bzmedia.com

Columnists

Andrew Binstock

abinstock@pacificdataworks.com

Allen Holub

allen@holub.com

Larry O'Brien

larryo@thinkingin.net

Contributing Writers

Alyson Behr

Shari L. Gould

Lisa Morgan

Esther Schindler

Advertising Sales

Southwest U.S.

Julie Fountain

+1-831-476-1716 • jfountain@bzmedia.com

Northeast/North Central U.S./Canada

David Karp

+1-516-922-5253 • dkarp@bzmedia.com

Northwest U.S./Canada

Paula F. Miller

+1-925-831-3803 • pmiller@bzmedia.com

Southeast U.S./Europe

Jonathan Sawyer

+1-603-924-4489 • jsawyer@bzmedia.com

Advertising Traffic

Phyllis Oakes

+1-516-922-2287 • poakes@bzmedia.com

Director of Events

Donna Esposito

+1-415-785-3419 • desposito@bzmedia.com

Director of Circulation & Manufacturing

Rebecca Pappas

+1-516-922-1818 • rpappas@bzmedia.com

Office Manager/Marketing

Cathy Zimmermann

+1-516-922-2101 x108 • czimmermann@bzmedia.com

IT/Web Administrator

Gene De Libero

gdelibero@bzmedia.com

Customer Service/Subscriptions

+1-866-254-0110 • service@bzmedia.com

Accounting

Viena Isaray

accounting@bzmedia.com

Article Reprints

Lisa Abelson • Lisa Abelson & Co.

+1-516-379-7097 • fax +1-516-379-3603

lisa@abelsonreprints.com

BZ Media



President

Ted Bahr

Executive Vice President

Alan Zeichnick

BZ Media LLC

2 East Main Street

Oyster Bay, NY 11771

+1-516-922-2101 • fax +1-516-922-1822

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A Little Dose of Mono

The Mono project is a Novell-sponsored, open-source implementation of C# and the Common Language Infrastructure. It runs under a number of operating systems, most notably Linux, and after a good deal of scrutiny, my conclusion is that the recent 1.0 release is a viable option, not just for exploring C# or the infrastructure, but for delivering server-side applications and for administration- and form-based client programs.

The Linux desktop environments and their APIs are new to me, so I hesitate to judge Mono's appropriateness for client programs that have complex UI needs, but the quality of the Mono implementation seems so uniformly high that I suspect that it's not just a viable option, but an attractive one.

The Mono project was initiated by and is led by Miguel de Icaza.

de Icaza is one of those types who, in conversation, impresses not by holding forth, but by holding back. He doesn't speak up particularly often, and when asked about the difficulty of implementing a feature, he typically shrugs it off as no great burden. ("Any problems with generics?" *Shakes his head no.* "Are anonymous functions hard to implement?" *Slight smirk, shakes his head no.* One suspects that "What about quantum computing?"

would elicit a slight wince and, after a few seconds, a similar demurral.)

The Mono project has been under way since 2001, and even 18 months ago, when I was regularly testing the several hundred programs in my book using it, the compiler was solid. The few issues I found (fairly classified as corner cases) were addressed within a matter of weeks after submitting them. That's one of the great advantages of open-source processes.

By now, the compiler and infrastructure seem to me to be stable enough to trust for server processes running day in and day out; given the relative ease of replicating multiple Linux servers and Mono's integration with Apache, I think that teams contemplating low-cost scaling of dynamic Web sites or Web services ought to give Mono a serious evaluation.

Although the past few years and programs like Symantec's Ghost have made replicating Windows machines significantly easier, replicating Linux machines is trivial.

Also, although Windows has improved its remote access and scriptability for administration, it's fair to say

that there is a far greater depth of experience in the Unix culture for administering groups of machines.

Apache is at least as trustworthy and dependable as Microsoft's Internet Information Server, bundled with Windows servers. I remain unconvinced that open-source database solutions can claim the same performance and reliability as commercial products, but I'll acknowledge that they suffice for many situations.

I've had several clients be pleased with Linux for their Web-facing servers and different operating systems for their Oracle or SQL Server database servers. (Of course, network topology and capacity cannot be ignored in such scenarios!)

I would not hesitate to be involved in a project that combined such a physical architecture with Mono as the implementation platform—I think it would be a dependable and economical way to bring C#, in my opinion a better solution than Java for enterprise development, into a Unix shop.

As I said, I'm not nearly as familiar with Linux desktop environments and their related interface toolkits, so I can't make as confident a recommendation on

the use of Mono in a significant client application, but the first justification for Mono was as an offshoot to the Gnome Project. As far as it goes, I am building a Linux-based personal video recorder and hope to use Mono for whatever automation I can't put together from existing sources.

C# and .NET are rightly identified as primarily Microsoftian. They are most likely to be adopted within shops that have chosen to use Microsoft operating systems and technologies in a majority, if not the entirety, of systems.

However, fair-minded individuals, even those who for political or technical reasons have decided against the use of Microsoft operating systems, should acknowledge that C# and the Common Language Infrastructure are well designed and make attractive promises of productivity.

Whether the ultimate platform is better than J2EE is something that honest people can disagree on.

At the very least, with Mono, people will be able to judge for themselves without giving a dime to Redmond.

At the very most, people will find a powerful open-source solution that is competitive with the best that Microsoft has to offer. ■

Larry O'Brien is a technology consultant and analyst, and the founding editor of Software Development Magazine.

Windows & .NET Watch



Larry O'Brien

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Caching In on Java Caches

There is a growing perception that J2EE suffers from a troubling architectural defect: application code and deployment features are all mixed together. This is due to the need imposed on developers to code deployment constraints directly into the codebase. There are many instances of this, but few as common as developers' need to build and manage their own caches.

Caches are built to hold recordsets from database accesses, for data entered by users, for JSPs, for data shared with other applications, for Web services and so on. Writing usable, reliable caches is not trivial, but managing them can be a nightmare.

Some caches need persistence and must not be flushed until all processing is complete, other caches need to be flushed frequently, and then, of course, others must be flushed at specific moments and in a specific order. Choosing a cache size is another problem, and is often determined by the developer's own knowledge of the resources available on the deployment system.

The more a developer codes to these constraints, the more brittle the application becomes and the more the developer is forced to do something not in his province: managing appli-

cation deployment.

When caches are hard-coded to a particular size, critical performance bottlenecks are hardwired and cannot benefit. The application can no longer be tuned, and in this sense, it is inching toward unmanageability.

Clusters compound this problem because of their need to share data between nodes. Two common problems occur here: sharing state information and sharing database records.

The first problem, unfortunately, is often solved by using a database to hold state data—an easy, effective and completely incorrect solution.

The only benefits a database delivers are locked access and reliability. But all of the other work a database performs to support ACID properties—atomicity, consistency, isolation and durability—and to persist data to disk causes a huge overhead. If the DBMS used for this persistence is the same one that stores the application's data, performance will be detrimentally affected.

Even if state is shared through other means, clusters risk thrashing a database repetitively performing the same queries, unaware that the returned

recordset already exists in the cache of another node.

What enterprise Java needs, then, is a caching mechanism that fulfills specific criteria, relieves pressure on the database, separates the caching from the application coding and scales well. To do this, a good Java cache solution needs the following qualities:

- Caches must be dynamic, able to grow and shrink.
- Cached data must be sharable between nodes.
- Caches must not use a database to persist information.
- Caches must be able to monitor the database and invalidate recordsets they're holding.
- They must be manageable by the system administrator/manager.
- They must be easy for developers to use.

Few offerings come close to meeting those requirements. The baseline solution today is JCache, which is an open-source implementation of the JCP's JSR 107. It removes many of the headaches of writing a cache and intimately managing its operations. However, JCache does not directly support caching between all nodes on a cluster, nor does it do anything to monitor freshness of recordsets

extracted from a database.

Vendors are starting to respond. BEA's WebSphere and IBM's WebLogic offer caching add-ons that solve some of the problems. Tangosol and SpiritSoft are also working on these issues.

SpiritSoft, you might recall, formerly specialized in Java Message Service products targeted at banking and financial services markets. Later, SpiritSoft started going after the caching problem. It implemented JCache and added JMS as a message transport system for pushing updates. It then leased caching patents from Persistence, the vendor of the well-regarded but little-sold PowerTier app server.

Today, SpiritSoft is coming close to the type of cache that enterprise Java apps need. It already is working on the problem of invalidating cached database records by monitoring the DBMS; that product is scheduled to ship toward the end of the year. Several start-ups also are pursuing similar technology, but they have not yet released products.

Caching will likely become another of the technologies absorbed into the J2EE specification. However, it will remain one of the features by which vendors will be able to truly distinguish themselves, both as to capabilities and performance. ■

Andrew Binstock is the principal analyst at Pacific Data Works LLC.

Integration Watch



Andrew Binstock

From JavaOne to JavaOne-Half

The most interesting thing about this year's JavaOne was that it wasn't—interesting, that is. Over the years, the conference has gone from one of the best technical conferences that I've ever attended (in 1996, if I remember right) to one of the most vapid.

Admittedly, as the platform matures there are fewer wowie-zowie features to discuss, but most of this conference just rehashed the new features of Java 5 (formerly known as 1.5)—material that was covered last year in sessions that used the same slides as this year's sessions. You come away from a great conference knowing how to do new things and having lots of new ideas. I came away from this year's JavaOne ready for a vacation.

SD Times' editor-in-chief, Alan Zeichick, came up with an interesting characterization of the problem: The goal of a technical conference should be to educate, not to influence or persuade developers.

The context for Alan's comment was Microsoft's recent developer conferences, but his comment applies to JavaOne as well, which has developed a very Microsoft-like flavor of late. The main goal of this year's JavaOne seemed to be to convince attendees that Sun, and Java, were relevant. I don't need to be convinced that Java is relevant, but

Sun's relevance is another issue.

The first JavaOne was so good because it was focused entirely on education, on learning to program in Java. I came away from the conference eager to apply what I had learned, and I had learned a lot.

I vividly remember a session on the Abstract Window Toolkit (AWT), for example, where the speaker analyzed the library in terms of the implemented design patterns and showed how the APIs fit into those patterns. The APIs were put into a context that allowed me to understand the whole library, including those APIs that were not discussed during this session. The talk, which didn't follow a rigid format, was packed with information. I came out of this session thoroughly understanding AWT and its architecture, and could immediately apply what I'd learned.

By contrast, this year I listened to somebody droning on for an hour about a list of APIs, with no attempt to describe the overall architecture and design considerations of the subsystem. Mix in a heavy-enough accent so that you understand only half the words, a pace so slow that it puts you to sleep and no real code examples, and you'll understand the

depth to which the conference has fallen.

So, how to fix things?

First, Sun has to eliminate marketing sessions entirely. (It could start by eliminating the all-morning keynote addresses, which have degraded to feel-good propaganda sessions.) The session-selection criteria should be determined by programmers.

Sun should ask the user community, "What are you working on, and what programming problems are you encountering?" and then develop sessions to address those problems, to help programmers write programs. I don't want to be convinced that some technology is good. I want to learn something useful.

Next, pick the presenters carefully. Most sessions I attended were presented by people who were undoubtedly good engineers, but were lousy speakers and incompetent educators. Presenting technical material is a skill that takes serious practice to develop. Sun should either pick competent people from outside the organization to do its presenting (and pay them well—speakers at JavaOne currently are not paid at all), or it should train its own engineers to be good presenters.

Java Watch



Allen Holub

Also, Sun forces presenters to create slides that conform to rigid templates and formulas. These formulas have to go. Speakers are required, for example, to talk about what they're going to talk about, talk about it, then talk about what they talked about. This formula is rarely followed by good educators. There's a difference between a "presentation" and a true classroom session.

Finally, lock the lawyers in a closet. I'm guessing that all presentations are reviewed by Sun's lawyers, who do their best to turn content into garbage.

Someone, for example, has decided that "Java" always must be used as an adjective, not a noun, to protect Sun's trademark. Imagine that instead of saying, "Things go better with Coke," you'd have to say, "Things go better with the Coca-Cola™ brand beverage." This rule leads to ridiculous stuff like: "Building Peer-to-Peer Java Technology-Based Applications With JXTA™ Networking Technology," which isn't even English. What is a "technology-based" application anyway? And yes, that's a real class.

You get the idea. JavaOne was once a great conference. It could be great again. To get there, however, Sun needs to wrest the conference away from the marketing department and give it back to the engineers and educators. ■

Allen Holub is an architect, consultant and instructor in C/C++, Java and OO Design. Reach him at www.holub.com.

The Once and Future Kings

The phrase "The Once and Future King" has been used in many contexts, but is arguably best known as a title of a collection of books about the mythical King Arthur. Written by T.H. White in the 1950s, those books have nothing to do whatsoever with software development.

Yet that title is fitting as a collective description of software developers. For a two-decade period, from the early 1980s through the end of the 1990s, programmers were universally the fair-haired children not only of the computer industry, but also of the global Fortune 2000. Those brilliant and essential individuals were pampered and adored, their eccentricities valued, their character flaws revered.

A good systems analyst, software architect or coding god (or goddess) was hard to find. They knew it. They received, often without asking, huge salaries, generous stock-option grants and signing bonuses, and waivers from nearly every human-resources best practice. They could come and go whenever they wanted, sleep at their desk, bring their dogs to the office, play Foosball, park their Lamborghinis in the lobby, drink Jolt cola, go on sabbatical after two years, and forget to bathe or change clothes. As long as they kept crankin' out that golden code, there were no rules.

The developer was king. Whether in Silicon Valley, on Route 128 or in other clusters, it was a golden age. It was, in a word, *nerdvana*, forever captured in early Dilbert cartoons and piles of unwashed product-launch T-shirts.

In fact, many of the corporate cultural changes initially put in place to encourage software developers (and their colleagues, the hardware engineers) began to migrate outside of the IT department.

Foosball tables, fridges full of free soft drinks and company masseuses spread throughout different industries. While it seemed that venture-funded start-ups on the fast track to an IPO had the most generous culture, competition dictated that even old-economy firms had to loosen up beyond dress-down Fridays.

Industry Watch



POP GOES THE BUBBLE

Then the recession happened. Stock options evaporated, companies closed. The well of IPOs and easy venture money dried up. VCs, stock analysts and entrepreneurs would no longer tolerate the excess head count and employee perks. We saw the Foosball table be sublet to another tenant, the free-

drink fridge be replaced by a vending machine, the sign-up bonuses disappear.

Suddenly, developers were mortal. No longer king, they had to wash their shirts. They had to show up at meetings. Forget about stock options—they had to keep their jobs. Even so, there were layoffs for many, and less generous compensation for the survivors. Never mind the purple of royalty; they were just ordinary white-collar workers, even if the white collar was a Beefy-T.

That was just the first round. The spectre of offshoring is causing CEOs and CFOs to re-examine their staffing policies, with developers in California and Massachusetts competing salary-wise against those in India, China and Russia. Suddenly, the rock-climbing walls and sabbaticals seem a vague memory from the late Cretaceous period.

Or are they?

There are signs and portents of resurrection of the high-tech economy. They're subtle and may simply be a false alarm, but the signs are there nonetheless. The

long-awaited initial public offering of Google, for example, is coming, and the company set an extremely optimistic price target for its stock that would value them between US\$29 and \$36 billion. Then there's Salesforce.com, which announced its own IPO with a more earthly market cap of US\$1.2 billion.

Both Google and Salesforce are dot-coms. Does that mean the dot-com era is coming back, that your CEO should order more Foosball tables? Is the developer about to become king once more?

STILL POPPED

The dynamics have changed, not only in business but in the way that software is developed. That so many talented out-of-work individuals are now willing to put on clean blue jeans and brown-bag their lunch means the culture of developer-worship will never return, at least not to the same extent.

Developers are mortal. Or so they now know. Their colleagues, managers, executives, venture capitalists and the stock market know that too.

But that doesn't mean that developers are doomed to a life of soggy tuna-fish sandwiches instead of filet mignon at the company cafeteria.

The team of programmers who slogged through a death-march project to bring an EDI system online with Wal-Mart, or who set up a company's migration from mainframes to Linux clusters running J2EE app servers, or who created Web-based interfaces to a company's 20 different apps will always be important. Someday that will be revered again. They just won't be *as* revered as they used to be, and they may never see the return of the get-rich IPO.

Overall, as we ponder the fate of our once and future kings—and queens—of software development, that's ultimately a healthier situation to live in. ■

Alan Zeichnick is editor-in-chief of SD Times. David Rubinstein is enjoying a dot-com-era sabbatical.

BUSINESS BRIEFS

IBM Corp. has signed a definitive agreement to acquire **Alphablox Corp.** for an undisclosed sum. Software from Alphablox, a privately held analytics software developer based in Mountain View, Calif., can be used to embed analysis logic, such as to identify buying trends, into existing applications or processes, and make that information available across an enterprise. IBM will use the technology to fortify the business intelligence offerings of its data management solutions division . . . **Veritas Software Corp.**, which develops data protection, storage and management solutions, has acquired **Invio Software Inc.**, a privately held process automation tools vendor based in Los Altos, Calif. The all-cash deal, valued at US\$25 million, enables Veritas to own Invio technology that was already an integral component in some of its products.

EARNINGS: **Apple Computer Inc.** posted a net profit of US\$61 million, or 16 cents per diluted share, for its fiscal 2004 third quarter that ended June 26. The results were up significantly from the same period last year, during which the company reported a net profit of \$19 million, or 5 cents per share. Apple's revenues for the quarter were just over \$2 billion, an increase of 30 percent from the year-ago period . . . **Intel Corp.** has announced second-quarter revenues of US\$8.05 billion,

an 18 percent increase from the same period last year, but flat compared with the previous quarter. Net income for the quarter was \$1.8 billion, or 27 cents per share, an increase of 96 percent from the 14 cents per share of a year ago . . . **Microsoft Corp.**, flush with cash, has approved an 8-cents-per-share quarterly dividend. It will also buy back US\$30 billion in stock over the next four years, as well as offer a special one-time dividend of \$3 per share. The company figures the total return to shareholders as being \$75 billion over the next four years . . . Cell-phone chip maker **Qualcomm Inc.** posted revenues of US\$1.3 billion for its fiscal third quarter ended June 27, a 50 percent increase from a year ago, and an increase of 10 percent sequentially . . . Integration software vendor **Ascential Software Corp.** announced second-quarter results showing net income of US\$1.2 million, or 2 cents per diluted share, on \$64.7 million in revenues, an increase of 62 percent from a year ago . . . **EMC Corp.**, parent company of virtual operating system developer **VMWare Software**, reported second-quarter revenues of US\$1.97 billion, up 33 percent from year-ago earnings of \$1.48 billion. Net income for the quarter was \$193 million, or 8 cents per diluted share, a 136 percent increase from the year-ago period. For its part, VMWare contributed \$47,198 in revenues for the second quarter and \$39,294 for the first quarter. ■



CALENDAR OF EVENTS

HP World Conference & Expo Aug. 16-20

Chicago
INTEREX
www.hpworld.com

Embedded Software Development Conference Aug. 17-19

San Jose
BZ MEDIA LLC
www.esdevcon.com

FileMaker Developer Conference Aug. 29-Sept. 1

Phoenix
ADVISOR MEDIA INC.
advisorevents.com/Event/CFF0408

Intel Developer Forum Sept. 7-9

San Francisco
INTEL CORP.
www.intel.com/idf/us/fall2004/systems

Borland Conference Sept. 11-15

San Jose
BORLAND SOFTWARE CORP.
info.borland.com/conf2004

VSLive Orlando Sept. 11-15

Orlando, Fla.
FAWCETTE TECHNICAL PUBLICATIONS INC.
www.ftponline.com/conferences/vslive/2004/or

Embedded Systems Conference Sept. 13-16

Boston
CMP MEDIA LLC
www.esconline.com/boston

SunNetwork Sept. 14-16

San Francisco
SUN MICROSYSTEMS INC.
www.sun.com/sncsf2004

International Function Point Users Group Annual Conference Sept. 19-24

San Diego
IFPUG
www.ifpug.org/conferences/annual.htm

SD Best Practices Conference & Expo Sept. 20-23

Boston
CMP MEDIA LLC
www.sdexpo.com

IBM DB2 Information Management Technical Conference Sept. 20-24

Las Vegas
IBM CORP.
www.ibm.com/services/learning/conf/us

Software Business 2004 Sept. 22-23

San Francisco
SOFTWARE BUSINESS MAGAZINE
www.softwarebusinessonline.com

Access-VB-SQL Advisor Live Sept. 29-Oct. 3

Las Vegas
ADVISOR MEDIA INC.
advisorevents.com/CMB0409p.nsf

For a more complete calendar of U.S. software development events, see www.bzmedia.com/calendar.

Information is subject to change. Send news about upcoming events to events@bzmedia.com.

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